CLASS 134, CLEANING AND LIQUID CONTACT WITH SOLIDS

SECTION I - CLASS DEFINITION

(1) This is the generic class for:

(A) Cleaning, i.e., the separation or removal of adherent dirt, scale, tarnish, impurities or any other foreign or undesired matter (as distinguished from solid-material working to obtain desired shapes or new surfaces or removal of a constituent part of the base material of a solid) from solid materials or objects whether or not the resultant separated ingredients are recovered in whole or in part for subsequent use. This includes the pickling of metal. By materials or objects are meant any solid material or object, whether a machine or any other solid in either a naturally occurring or manufactured state and includes the living body.

(B) The contacting of solids with liquids for any purpose not provided for in other classes.

(2) This class has processes and apparatus for the purposes of section (A) above, not elsewhere provided for, as pointed out in the appended notes, but not the resultant products. When the product is claimed, it is classified in the class appropriate thereto and cross-referenced here for the process or apparatus disclosed or claimed.

(3) Cleaning may be performed by, or may involve as a part thereof, contacting solids with liquids. The contacting of solids with liquids may be for purposes other than cleaning. Where the contacting of solids with liquids is for some purpose other than cleaning and some other class provides for processes or apparatus for such purpose, the patent is in general placed in such class even though a combination with cleaning steps is claimed, see the notes below for variations of this line with particular other classes.

(4) Steps or means for cleaning and/or for liquid contact with solids are frequently claimed in combination with steps or means for some additional purpose. Such processes and apparatus are in general classified in the class appropriate to the steps or means for the additional purpose. In other words, this class takes the subcombination for cleaning and/or liquid contact with solids, with steps or means to promote, facilitate, or perfect the cleaning or liquid contact. Most manufacturing classes involve cleaning of, or contacting the product being manufactured with, liquids.

(5) This class dominates over the compounds and compositions used for cleaning or liquid contact with solids. Therefore, where a process or apparatus for this class is claimed and also a compound or composition used therein, the patent is classifiable in this class with a cross-reference to the appropriate compound or composition class. For further particulars as to this line with particular classes, see Lines With Other Classes and Within This Class, Compounds and Compositions, below.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

(1) PAPER, TEXTILES, FIBERS, HIDES, SKINS, FEATHERS, AND ANIMAL TISSUES

This class (134) does not have processes restricted to either cleaning or contacting with liquids the materials, paper, hides, skins, feathers, and animal tissues either, per se, or combined with other treatments. Class 134 has processes of cleaning of textiles and fibers not involving fluid treatment. Processes of mechanical cleaning (nonsolvent, nonreactive) of textiles and fibers by a gas blast or by suction is not considered a fluid treatment and has been placed in Class 134. Class 134 has, however, apparatus for cleaning and contacting with liquids the above named materials where not provided for in other classes. For subject matter excluded from Class 134, see References to Other classes, below.

(2) COATING AND IMPREGNATING

Some of the classes referenced in References to Other Classes, below, for this subject matter have processes and apparatus for coating and impregnating even though combined with either or both precedent cleaning of the work to be coated or subsequent cleaning of the coating. This class (134) has the cleaning subcombination.

(3) COMPOUNDS AND COMPOSITIONS

Compounds and compositions and their manufactures (including purification) are in the classes appropriate to the compound or composition claimed, made or purified, or in the class appropriate to the manufacturing apparatus or process claimed. In general, where both a process for this class (134) and a compound or composition used in such process are claimed, classification is in this class (134) with a cross-reference to the appropriate compound or composition class.

(4) MATERIAL MIXING, SEPARATING, CLASSIFYING, OR ASSORTING

This class (134) has cleaning and liquid contact combinations having the above subcombinations but does not take the above subject matter, per se, even though involving the cleaning of the apparatus used or involving the contacting of solids with liquids as part of the mixing, separating, classifying, or assorting operation. See References to Other Classes below.

(5) INDEX TO PRECEDING NOTES

Other classes having subject matter, per se, within the definitions of this class, combinations of which such subject matter is a part, and subcombinations of such subject matter, considered worthy of special mention are found in References to Other Classes, below.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

4, Baths, Closets, Sinks, and Spittoons, which has such subject matter, per se, and combined with means or steps to clean the same or to contact the same with liquids for various purposes, such as cleaning and disinfecting, and see particularly subclasses 538 through 660 for shower baths, basins, tubs and sinks, particularly designed for human use, subclasses 538 through 660; 637, 638 and 656, having drain boards and drain racks combined with sinks, or having features claimed adapting them to be mounted on or in, or to engage sink structures.

5, Beds, appropriate subclasses. Class 269 is the residual locus for patents to a device for clamping, supporting and/or holding an article (or articles) in position to be operated on or treated. See notes thereunder for other related loci. See especially subclass 606 for a surgical table combined with drainage means.

7, Compound Tools, for combinations of plural tools one of which may be a cutter, scraper, or other tool useful for cleaning.

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, see note (1).

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, which is the class for processes of the following types; bleaching and dyeing materials of any kind; treating of hides, skins, and other animal tissues with chemicals or fluids; liquid and chemically reactive treatments of feathers; and treatment of textiles and fibers to chemically modify the same and some additional special treatments with fluids. The mechanical cleaning of textiles and fibers by a gas blast or by suction is not considered a fluid treatment and such processes have been placed in Class 134. The notes to Class 8 should be consulted for related art. Class 8 takes patents limited to such subject matter and also patents disclosing only such subject matter even though the claims are broad. (For paper, textiles, fibers, hides, etc., excluded from Class 134.)

12, Boot and Shoe Making, which takes such subject matter even though combined with Class 134 subject matter. See particularly subclasses: 18.2 and 148, shoe filling machines and processes; 41.3 pliabilizing soles, with fluid treatment; 70+ and 104, burnishing machines and tools (closely related to cleaning); 79.5, waxing and polishing.

15, Brushing, Scrubbing, and General Cleaning, see note (1) in Lines With Other Classes. Where a process which may use the apparatus of such class in its practice is also claimed, the patent is classified in some other class appropriate to the process, the apparatus being cross-reference to Class 15, Class 134 taking all such processes as are limited to cleaning or to liquid contact with solids not otherwise provided for, even though Class 15 apparatus is required for its practice. Class 15 takes apparatus in which a brush, beater, scrapers, shaker, eraser, wiper, shotter, or squeegee operates directly on the work, even though liquids are applied to the work at the same or a different station. Where the apparatus is disclosed for removing materials from the work by a gas or vapor blast action, or by a suction cleaner action, Class 15 has such apparatus even though liquids are applied to the work at a different station, while Class 134 has such apparatus where liquids are applied to the work at the same station.

15, Brushing, Scrubbing, and General Cleaning, for apparatus there provided for even though for operating on vegetables, fruits, textiles, etc., and see following note for a more complete statement relative to Class 15. (For paper, textiles, fibers, hides, etc., excluded from Class 134.)

19, Textiles: Fiber Preparation, for processes and apparatus for liberating fibers, working fibers, or assembling fibers, even though involving cleaning or contacting the same with liquids. (For paper, textiles, fibers, hides, etc., excluded

from Class 134; also see note (1), Lines With Other Classes, above).

23, Chemistry: Physical Processes, which is the generic class for the treatment and manufacture of inorganic chemicals by a physical process. (for compounds and compositions; also see Lines With Other Classes and Within This Class, Compounds and Compositions, above).

26, Textiles: Cloth Finishing, for processes and apparatus for finishing cloth, even though involving cleaning or contacting the cloth with liquids, e.g., subclass 18.5 for shrinking. (For paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

27, Undertaking, particularly subclasses 21.1+ for embalming.

28, Textiles: Manufacturing, for processes and apparatus for performing textile making operations, even though involving cleaning or contacting the textile with liquids. (For paper, textiles, fibers, hides, etc., excluded from Class 134. also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

29, Metal Working, see particularly subclasses: 76.1+, filing; 81.01+, scale removers and preventers; 89.5, burning in, wearing in, and oil burnishing; 90.01+, burnishing.

30, Cutlery, which has cutlery implements that may be used for cleaning purposes; and cleaning devices attached to and forming part of a cutlery combination, see particularly subclasses 41 and 124+.

34, Drying and Gas or Vapor Contact With Solids, particularly subclasses 280+ for feather drying and nonreactive gas or vapor treatments of feathers, and other appropriate subclasses for drying, per se, of textiles, fibers, and other materials (see Class 34 note below for a further statement). (For paper, textiles, fibers, hides, etc., excluded from Class 134.)

34, Drying and Gas or Vapor Contact With Solids, (see also Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above), which is the generic class for drying, per se, and the generic class for gas or vapor contact with solids. Class 134 takes processes limited to cleaning even though such processes involve only the contact of gases or vapors with solids, and also combined cleaning and drying processes, while Class 34 takes all processes limited to drying, per se, even though involving liquid contact, and also processes of gas or vapor contact with solids for purposes other than cleaning, Class 34 takes apparatus disclosed for applying gases or vapors only to the work and even though the apparatus is disclosed for cleaning, while Class 134 takes apparatus disclosed for contacting solid work with liquids only, both liquids and gases or vapors, or with fluids disclosed generically only. Class 34, subclasses 90+, takes apparatus for removing liquid from work by contacting the work with solid material which removes the liquid by absorption, absorption or adhesion (e.g., blotting devices).

37, Excavating, subclasses 199+ and 227+ having combined snow excavators and melters, and for hydraulic excavating or dredging in subclasses 466 and 307+.

38, Textiles: Ironing or Smoothing, (for paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

44, Fuel and Related Compositions, subclass 640 for composition for wall deposit prevention and removal. (for compounds and compositions; also see Lines With Other Classes and Within This Class, Compounds and Compositions, above).

47, Plant Husbandry, see particularly subclasses 27, 48.5, 79+ for plant irrigators.

47, Plant Husbandry, subclass 58.1 or processes of preparing vegetable seed for planting, including liquid application. (For paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

48, Gas: Heating and Illuminating, for pertinent subclass(es) as determined by schedule review.

51, Abrasive Tool Making Process, Material, or Composition, for an abrasive tool making process, material, or composition. (For compounds and compositions).

52, Static Structures (e.g., Buildings), subclass 37 for a window frame with a cleaner's hook, subclass 168 for a building with a protective liquid supply, and subclasses 171.3+ for residual constructions of a window with treating means for it.

55, Gas Separation, see note (4).

55, Gas Separation, for apparatus for separating materials from gases, (for material mixing, separating, classifying,etc., Lines With Other Classes and Within This Class, Material Mixing, Separating, Classifying, or Assorting, above).

56, Harvesters, subclass 395 for horse rake clearers; subclasses 400.08+ for hand rakes with cleaner, and subclass 448 for binder needle cleaners.

57, Textiles: Spinning, Twisting, and Twining, (for paper, textiles, fibers, hides, etc., excluded from Class 134; also Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

62, Refrigeration, subclass 64 for processes of cooling articles by contact with a liquid; and subclasses 373+ for apparatus for cooling an article by contact with a liquid having specific defined means for cooling the liquid.

65, Glass Manufacturing, subclass 27 for a glassworking or treating process combined with the step of repairing or cleaning of apparatus; subclass 116 for processes of tempering glass by quenching a liquid bath; and subclass 168 for glassworking or treating apparatus combined with positive apparatus cleaning means.

66, Textiles: Knitting, (for paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

68, Textiles: Fluid Treating Apparatus, which is the generic class for apparatus for the fluid treatment of textiles and fibers, and which takes such apparatus disclosed only for such purpose and disclosed for such purpose even though other purposes (as dishwashing, etc.) are disclosed. (For paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above).

69, Leather Manufactures, (for paper, textiles, fibers, hides, etc., excluded from Class 134; also see Lines With Other Classes and Within This Class, Paper, Textiles, Fibers, Hides, Skins, Feathers, and Animal Tissues, above)

69, Leather Manufactures, see note (1).

72, Metal Deforming, subclasses 38, 39+ and 46+ for a plastic-metal shaping apparatus combined with means to vapor-contact, lubricate or coat the work, and see the notes thereto.

73, Measuring and Testing, which is the generic class for processes and apparatus for measuring and testing, and see the notes to the class definition for other measuring and testing. Class 73 has measuring and testing involving liquid contact with the test specimen. Process and apparatus for cleaning or liquid contact with solids for purposes other than measuring or testing combined with measuring or testing are in Class 134, the measuring or testing being in Class 73, along with measuring or testing devices with a built in cleaning attachment, see subclass 324 for sight glasses with cleaner.

74, Machine Element or Mechanism, see appropriate subclasses for machine elements and mechanisms, per se, useful for operating apparatus of the type classified in Class 134.

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, for processes of recovering or producing metals which include contacting solids with liquids. Class 75 is the generic class for processes of separating metal from metal or metal from nonmetal for use of the metal in a metallurgical process. (For compounds and compositions; see note (3), Lines With Other Classes, above).

83, Cutting, subclass 168 for means to clean the tool or work.

84, Music, subclass 64 for cleaning pneumatic piano actions.

87, Textiles: Braiding, Netting, and Lace Making, (for paper, textiles, fibers, hides, etc., excluded from Class 134; see notes (1) and (2), Lines With Other Classes, above.)

95, Gas Separation: Processes, for processes of gas separation in combination with the regeneration of the separating media by cleaning or liquid contact with the separating media. (For material mixing, separating, classifying,etc.).

96, Gas Separation: Apparatus, for apparatus for gas separation in combination with means to regenerate the separating media by cleaning or liquid contact with the separating media, see particularly subclasses 228+ for gas separation apparatus having means using liquid to clean the separating apparatus. (For material mixing, separating, classifying,etc.).

99, Foods and Beverages: Apparatus, which is the generic class for apparatus for preparing and treating food and beverages involving more

than mere cleaning, apparatus for merely cleaning fruits, vegetables, etc., being in Class 134 or other classes in accordance with the lines there between. Class 99 has apparatus for separating, mechanically and such apparatus combined with cleaning and liquid contact means. Apparatus for cleaning with liquids or chemicals or liquid contact, per se, for other purposes in not in Class 99, but in Class 134 or other appropriate classes, even though for the purpose of removing naturally occurring parts of the work (as shells, fuzz, skins, etc.), there being no mechanical agent for cutting or comminuting the work (as a cutter, abrader, etc.). However, Class 99, subclasses 518+ and 600+, provides for devices in which grain is subjected to an appreciable abrading or rubbing in cleaning. (For paper, textiles, fibers, hides, etc., excluded from Class 134; also see note (1), Lines With Other Classes, above).

100, Presses, subclasses 104+ for presses not elsewhere classified, having drain means for expressed liquid. (for material mixing, separating, classifying,etc.; see note (4), Lines With Other Classes, above).

101, Printing, subclasses 423 through 425, having cleaning combinations.

104, Railways, subclasses 279+ for track clearers.

106, Compositions: Coating or Plastic, for such compositions and processes of making same. (for compounds and compositions; see note (3), Lines With Other Classes, above.)

108, Horizontally Supported Planar Surfaces, subclass 24 for a horizontal planar supporting surface member combined with drainage means.

111, Planting, subclasses 6+ for devices having earth working implements and adapted to deliver liquid or gas for contact with the soil.

114, Ships, subclass 222 for hull cleaning implements.

118, Coating Apparatus, for processes and apparatus for coating and impregnating even though combined with either or both precedent cleaning of the work; (see (2) Note, Lines With Other Classes, above).

119, Animal Husbandry, particularly subclasses 83+ for grooming devices and subclass 158 for anti-vermin dipping and washing.

122, Liquid Heaters and Vaporizers, subclass 361 and 379+ for combinations of water heaters with means to clean same.

123, Internal-Combustion Engines, subclass 198; processes of cleaning engines or parts thereof are in Class 134 even though claimed in combination with engine operation, where only such steps of engine operation are claimed as are necessary for the cleaning operation claimed, but engines claimed in combination with an engine cleaning attachment are in Class 123.

125, Stone Working, Class 134 has the subcombination of cleaning stone and brick by detergent action.

126, Stoves and Furnaces, subclass 16 for stoves with flue cleaners.

127, Sugar, Starch, and Carbohydrates, see note (3).

127, Sugar, Starch, and Carbohydrates, for processes of, and apparatus for, leaching purging or contacting liquids with solids used in connection with making, extracting or purifying carbohydrates. (For compounds and compositions).

131, Tobacco, particularly subclasses 300, 314 and 324 for tobacco cleaning treatment with fluids and brushing; 184.1+ for smoking devices (pipes, cigar or cigarette holders) with cleaner; 232 for ash receivers combined with a smoking devices cleaner and subclasses 243 through 246 for smoking device cleaners.

132, Toilet, subclass 7 for processes of treating (including cleaning) human hair upon the body; subclasses 9+ for devices for treating the hair; subclasses 112+ for combs with an orifice for applying fluent material; subclass 119 for combs combined with a teeth cleaner; subclasses 31+ for devices for curling hair with or without liquid contact; and subclasses 73+ for manicure devices.

137, Fluid Handling, appropriate subclass for fluid handling apparatus, including tanks, etc., which do not have means for applying liquids to solids, particularly subclasses 237+ for fluid handling apparatus combined with cleaning means, and subclass 357 for apparatus used for washing or applying fluid to vehicles when no means for containing, conveying, or supporting or guiding the movement of such vehicles or objects is claimed, and when the supply line is supported by part of the building.

139, Textiles: Weaving, (for paper, textiles, fibers, hides, etc., excluded from Class 134; also see note (1), Lines With Other Classes, above).

141, Fluent Material Handling, With Receiver or Receiver Coacting Means, for processes and apparatus for filling receivers with fluent material, per se, and combined with precedent or subsequent cleaning.

148, Metal Treatment, (see also note (3), Lines With OTher Classes, above). This class (148)

is the generic class for processes of treating metal. Class 134 has only the subcombination, the cleaning and pickling of metal, per se, (not involving any other character of metal treatment), including the use of detersive materials which include an ingredient (such as oil) which is left behind on the metal cleaned. Class 148 has various fluid and chemical treatments of solid metal to change the chemical or physical properties of the metal, as distinguished from cleaning and pickling thereof. Class 148, subclasses 240+ have processes for coating of metal in which an element of the coating is supplied by the metal base coated, Class 134, having no processes of this type.

148, Metal Treatment, subclasses 22+ for compositions for treating solid metal other than for cleaning and pickling. (For compounds and compositions).

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, has subject matter pertaining to differential etching apparatus, per se, see subclasses 345.1 through 345.55; for apparatus for moistening the flap of an envelope and causing the flap to adhere to the body of the envelope see subclasses 441.5-442.4, and for apparatus having means for shaping, scarifying, or cleaning joining sur only see subclass 535.

157, Wheelwright Machines, subclass 7 for tire setters combined with liquid tanks for cooling the tire.

160, Flexible or Portable Closure, Partition, or Panel, subclass 11 for combinations with a cleaner and subclass 44 for combinations with liquid applying means.

162, Paper Making and Fiber Liberation, subclasses 1+ and 233+ for processes and apparatus respectively for chemically liberating fibers from fibrous material (paper pulp digestion) and for chemically purifying or refining the liberated fibers. (For paper, textiles, fibers, hides, etc., excluded from Class 134.)

164, Metal Founding, subclasses 344+ and subclasses 401+ for apparatus for disintegrating a sand mold or core while in molding association with (a) a flask, or (b) a casting even though involving Class 134 subject matter, except abrading means (Class 51, Abrasive Tool Making Process, Material, or Composition) or an agitating screen (Class 209, Classifying, Separating and Assorting Solids) functioning as the sole means for disintegration. Also, see Class 164, subclasses 131+ for corresponding methods.

165, Heat Exchange, subclass 95, for a heat exchange device with a cleaning means.

166, Wells, subclasses 311+ for well cleaning processes and appropriate subclasses for well cleaning apparatus.

168, Farriery, subclasses 48.1+ for hoof cleaning tools.

171, Unearthing Plants or Buried Objects, subclasses 12, 13 and 52 for devices for cleaning or stripping material from the working surfaces of buried object recovery devices. See also subclass 25 for unearthing devices combined with a brushing or wiping means for cleaning the undesired adhering material from the surface of a recovered plant or like object; and see subclasses 14 and 17 for devices which may be combined with recovered object cleaning means or may include, as an inherent part of the unearthing of the objects, a means which incidentally causes a cleaning of said recovered object.

172, Earth Working, subclasses 606+ and the subclasses there noted for an earth working implement with a cleaner.

173, Tool Driving or Impacting, appropriate subclass for a means to drive or impact a tool or the like, and particularly subclasses 197+ for such means having a work cleansing modification.

174, Electricity: Conductors and Insulators, subclasses 8+ for those using fluids and subclass 211 for insulators with dirt or moisture removing means.

175, Boring or Penetrating The Earth, subclasses 207+ for means utilizing fluid to remove cuttings from a hole which is being formed in the earth.

184, Lubrication, Class 134 has no lubrication, per se. Class 184, subclass 1.5 has cleaning by flushing of automobile crank, transmission or differential casings combined lubricating and see the note to Class 184, subclass 1.5 for a complete statement of the line.

191, Electricity: Transmission to Vehicles, subclass 62 for trolley heads with ice clearers or preventers.

196, Mineral Oils: Apparatus, subclass 122 for mineral oil vaporizers having means to remove carbon.

198, Conveyors: Power-Driven, for conveyors, per se, and in subclasses 494+, a conveyor having installed as part of its structure a means for cleaning a component of the conveyor.

199, Type Casting, subclass 62 for cleaning attachments for casting mechanism of integral line machines.

201, Distillation: Processes, Thermolytic, for processes for destructively distilling solid carbonaceous material, particularly subclass 2 for a process for cleaning a coke oven and subclass 39, for a process including quenching char.

202, Distillation: Apparatus, see note (4) for processes and apparatus for separation of either solids or liquids by this operation. subclass 241 has processes and apparatus for cleaning and decarbonizing coke ovens, retorts or stills, subclasses 227+, has coke quenching, and subclass 170 has apparatus for vaporizing liquids and condensing the vapors on solid bodies in the upper part of the still.

202, Distillation: Apparatus, which has apparatus for recovering a liquid from a solid and/or other liquids by evaporation and condensation thereof. Class 134 takes claimed combinations of work handling or supporting means or steps, with means or steps to apply a liquid to the work, as by spraying or immersion, where said liquid is distilled or evaporated, whether or not the resulting vapor is (a) directly connected with the work or (b) condensed for reuse to contact the work. Such disclosures have been excluded from Class 134 if only the liquid distillation subcombination or the vapor-phase work contact subcombination has been claimed. For the latter subcombinations, see the line between Classes 34 and Class 202 as stated in the Class definition of Class 202, in Lines With Other Classes, Distillation Apparatus, in the last sentence of (1) Note (for material mixing, separating, classifying,etc.).

203, Distillation: Processes, Separatory, which has processes for distilling a liquid. For the line between this class (134) and Class 203, see the class definition of Class 203. Lines With Other Classes, Processes Including Evaporation. (for material mixing, separating, classifying,etc.; see (4) Note, Lines With Other Classes, above.)

204, Chemistry: Electrical and Wave Energy, appropriate subclasses for processes which include steps coming within Class 204 combined with cleaning of any kind or by any means or apparatus therefor and cleaning processes or apparatus therefor which include chemical action by electrical or wave energy, Class 134 has the subcombination of contacting solids with liquids; and for products solely disclosed as made by a Class 204 process except for those listed in the Class 204 definition under Lines With Other Classes and Within This Class, Exceptions.

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, for electrolytic treatment combined with cleaning of any kind (e.g., subclasses 210 through 219 for liquid treatment of a substrate followed by electrolytic coating, etc.) or by any means or apparatus therefor and for electrolytic cleaning (e.g., subclasses 705-723 for electrolytic removal of foreign material from metal or metal alloy and subclasses 766-769 for electrolytic treatment of other solid material in general, etc.). Class 134 has the subcombination of contacting solids with liquids.

208, Mineral Oils: Processes and Products, subclasses 14+ for mineral oil products and compositions. (For compounds and compositions).

208, Mineral Oils: Processes and Products, subclass 48, for processes of chemically converting hydrocarbons combined with a step of removing deleterious carbon accumulations formed on the equipment.

209, Classifying, Separating, and Assorting Solids, for separation of solids in accordance to their size or other differing physical characteristics, including the use of liquids to assist in such operations (for example, the liquid suspension and other liquid treatment subclasses) excepting processes and corresponding apparatus of cleaning work of dirt or foreign matter, which is adherent thereto (as distinguished from being merely mixed therewith as by being derived from a natural source, e.g., clay gravel beds); and see particularly subclasses 379+ for clearers for keeping open passages in sifters and subclass 487 for cleaners for stratifiers. Processes and apparatus in which the liquid used to promote separation of the solids into grades is disclosed and/or claimed as also treating the solids for purposes in addition to separation is not provided for in Class 134, but in Class 209 or other appropriate class. (For material mixing, separating, classifying,etc.; see (4) note, Lines With Other Classes, above).

210, Liquid Purification or Separation, subclasses 670+ for a process including rehabilitation of ion exchange or sorption material, subclasses 791+ for a process of rehabilitation of a filter

medium in situ, and subclasses 106+, 158, 159, 225, 269+, 276, 298, 327, 332, 353, 355, 391+, and 407 for the combination of filter means and means for cleaning the filter medium in situ. (for material mixing, separating, classifying,etc.; see (4) note, Lines With Other Classes, above).

211, Supports: Racks, appropriate subclasses for racks for supporting articles and even though the rack has features for draining, Class 134, having the combination of cleaning apparatus with a rack for holding articles either during or after cleaning.

216, Etching a Substrate: Processes, for material removal involving etching to form a desired shape, a new surface or removal of a constituent part of the base material of a solid.

220, Receptacles, for receptacles for holding articles or materials even though having features for draining, there being no means for cleaning or applying liquids to the work, particularly subclasses 485+ for the sectional type, 500+ for the wire type 600+ for the compartment type, 668+ for bottom structure, for skeleton frame type, and see subclasses 695+ for scraping attachments.

221, Article Dispensing, appropriate subclasses for article dispensers, not otherwise provided for, not claimed in combination with means or steps for cleaning or contacting with liquids the articles dispensed.

222, Dispensing, for liquid dispensers, per se, and subclasses 148+, and see the notes thereto for dispensers with a cleaning attachment.

223, Apparel Apparatus, subclass 11 for apparatus for removing water and size from hat bodies; subclass 23 for hat cleaning apparatus.

228, Metal Fusion Bonding, subclasses 19+ for apparatus for and subclass 125 for method of bonding and removing excess flux or solder from a bonded joint; subclasses 201+ and 205+ for bonding combined with cleaning.

239, Fluid Sprinkling, Spraying, and Diffusing, appropriate subclasses, especially subclasses 302+, 398+ and 549 for multiple fluid sprayers. (for material mixing, separating, classifying,etc.).

239, Fluid Sprinkling, Spraying, and Diffusing, (see also note 4) for such subcombinations, particularly subclasses 146+ for mobile or ambulant devices for applying liquids to railroads, streets, etc., other appropriate subclasses for miscellaneous fluid supplying devices (e.g., subclasses 208+) for washing or applying fluids to vehicles or other objects when no means for containing, conveying, supporting or guiding the movement of such vehicles or objects is claimed; and subclasses 104+ for nozzle cleaners or flushers. Liquid applicators such as sprayers supported upon or guided by a track or conduit have been placed in Class 134 (or Class 118) where liquid application is limited essentially to the track or conduit and in Class 239 where an area (such as a street or field) is sprayed even though this area may incidentally include a track, conduit or guide.

241, Solid Material Comminution or Disintegration, subclasses 15+ and 38+ for processes and apparatus for the purpose of the class combined with means to contact the work with fluids.

244, Aeronautics and Astronautics, subclass 134, for ice prevention.

246, Railway Switches and Signals, subclasses 428 and 444, for track switches having snow removal and automatic dirt removal means.

248, Supports, for article supports even though features for draining are provided.

252, Compositions, which is the generic class for compositions of matter. See the section LINES WITH OTHER CLASSES AND WITHIN THIS CLASS in the class definition for a listing of composition classes in the USPCS and its use for determining placement of generic claims with multiple disclosed utilities. Class 252 has several classes which are an integral part of its schedule and which follow the rules of hierarchical placement for a class. See particularly: subclasses 79.1+, for etching or brightening compositions; subclass 88.1, for dust suppressants for bulk materials, or processes of preparing (e.g., for consolidating dust in coal mines, controlling soil erosion, etc.); subclass 88.2 for compositions for coating or impregnating a substrate used for collecting fine particles by adherence, or processes of preparing (e.g., for impregnating dusting cloths, dust filters, etc.); subclasses 175+, for water-softening or purifying or scale-inhibiting agents; subclass 364, for solvents.

260, Chemistry of Carbon Compounds, which is the generic class for such compounds. (for compounds and compositions; see note (3), Lines With Other Classes, above).

261, Gas and Liquid Contact Apparatus, for gas and liquid contact, per se. Where gas and liquid contact is claimed in combination with means for holding or handling a solid which is to be cleaned or contacted by the gas and liquid mix-

ture, classification is in Class 134 or other class appropriate to the combination. (for material mixing, separating, classifying,etc.; see note (4), Lines With Other Classes, above).

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, for processes within the class definition which may be combined with a Class 134 step, e.g., subclass 39 which includes the step of cleaning, polishing or preconditioning apparatus for use, and subclass 233, providing for subsequent washing of a molded article.

266, Metallurgical Apparatus, for apparatus for treating solid metal with liquids and see the note to Class 266, subclass 114 for the line.

280, Land Vehicles, subclasses 855+ for wheel scrapers and cleaners.

291, Track Sanders, subclass 12 for fluid delivery type blast nozzles with cleaners, subclasses 42+ for sand pipe cleaners and subclass 48 for sand screens.

294, Handling: Hand and Hoist-Line Implements, subclasses 50+ for fork-tine or shovel clearers, and also for hand and hoist-line implements for picking up material, as subclasses 49+ for hand forks and shovels, 61 for spears, 65.5 for magnets, 67.1 for frames and cages, 68.22+ for hoisting bucket type, and 86.4+ for grapples.

299, Mining or In Situ Disintegration of Hard Material, subclasses 3+ for a process or apparatus for melting or dissolving material for the recovery of valuable material from an in situ location in the earth.

312, Supports: Cabinet Structure, for draining cabinets, and for cabinets having washing apparatus as a part of the combination.

314, Electric Lamp and Discharge Devices: Consumable Electrodes, subclass 22 for such devices with fluent material feed to the discharge, and subclasses 23+ for combinations with a cleaner.

335, Electricity: Magnetically Operated Switches, Magnets, and Electromagnets, subclasses 285+ for magnets which may be used to remove or pick up magnetic material from a surface.

362, Illumination, subclass 458 for burner tip cleaners.

366, Agitating, (see note (4), Lines With Other Classes, above), for mere agitating, as distinguished from agitating to grind. Note that cleaning by tumbling involving liquid contact is in Class 134.

366, Agitating, for agitators, per se, and includes the combination of means for feeding to and discharging from the agitator. Containers having a chamber and an agitating element therein to cause mixing and agitation of a mixture of liquids and solids in the container are in Class 366. Where there is a carrier mounted in the container to merely convey solid work therethrough in contact with the liquid in the container, classification is in Class 134, even though the carrier causes agitation of the liquid that contacts the carried solid work, Class 134 also having means for agitating liquid materials when claimed in combination with a separate means for holding or handling a solid which is to be cleaned or contacted by the liquid. Liquid contacting agitators combined with other devices not provided for as combinations in Class 366 (see the class definition of that class) e.g., means to separate the contact liquid from the treated solid, are provided for in this class (134) or other appropriate class according to the lines therebetween. (For material mixing, separating, classifying,etc.).

369, Dynamic Information Storage or Retrieval, subclasses 72+ for record cleaning combined with record use.

384, Bearings, subclasses 137 and 384 for bearing with cleaning means.

399, Electrophotography, subclasses 34+ for diagnostics of a residual toner removal system, subclass 245 for self-cleaning with electrodes a liquid development application member, and subclasses 343+ for cleaning of an image surface, per se. (For paper, textiles, fibers, hides, etc., excluded from Class 134.)

400, Typewriting Machines, subclasses: 191+, inking devices; 695+, erasing device attachments; 701+, cleaning devices.

401, Coating Implements With Material Supply, appropriate subclasses, wherein subclasses, 196+ and 261+, are to implements whose tool is blade-like or pad-like and subclasses 268+ wherein it is a brush, broom or mop; hence, each of these loci is likely to include cleaning implements.

401, Coating Implements With Material Supply, (for processes and apparatus for coating and impregnating even though combined with either or both precedent cleaning of the work)

406, Conveyors: Fluid Current, appropriate subclasses for hydraulic conveyors.

414, Material or Article Handling, appropriate subclasses for handling apparatus and processes in general not claimed in combination with means or steps for cleaning or contacting with liquid

the work handled; see such subclasses as 146, 147+, and 288+ for a chamber or static receptacle and means to charge, discharge or move material therewithin; subclasses 217+ for moving material between zones of different pressures; subclasses 222.01+ for charging a load-supporting element from a source and moving it to a working, treating, or inspecting station, and subclass 287 for a static receptacle of a material conditioning type and means to move material to, within, or from the receptacle.

417, Pumps, for pump structure, including jet pumps.

418, Rotary Expansible Chamber Devices, for rotary expansible chamber devices, per se.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, appropriate subclasses for processes of disinfecting, deodorizing, preserving, or sterilizing, also for like apparatus not elsewhere provided for, for such subject matter, per se. Class 134 takes cleaning even though an agent for disinfecting, deodorizing, preserving, or sterilizing is used.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, which is the generic class for chemical apparatus. (For compounds and compositions).

423, Chemistry of Inorganic Compounds, for manufacturing inorganic compounds by chemical reaction and processes for extracting, leaching or dissolving inorganic compounds and non-metallic elements. (For compounds and compositions).

424, Drug, Bio-Affecting and Body Treating Compositions, for a medicinal or biocidal composition or a composition for enhancing the appearance of a living body or for a process of mere use of such a composition, which may be a liquid. (For compounds and compositions).

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 67+ for a filament or film extrusion device discharging directly into a liquid bath or shower means, subclass 71 for shaping or reshaping means combined with means advancing a continuous length work through a downstream liquid bath or shower means, and subclasses 225+ for shaping or reshaping apparatus for nonmetals combined with apparatus cleaning means; see the search notes thereunder.

426, Food or Edible Material: Processes, Compositions, and Products, which is the generic class for processes of preparing foods involving cleaning or liquid contact with solids. The mere cleaning of food or edible material i.e., the removal of naturally occurring substances on food (e.g., dirt, smut, etc.) are provided for in Class 134. (For paper, textiles, fibers, hides, etc., excluded from Class 134; also see note (1), Lines With Other Classes, above).

427, Coating Processes, The application of liquids or other materials to a base to impregnate the same for retention therein, or for obtaining a surface coating (either type of which may be permanent or transitory) is not provided for in this class (134), the above noted classes being the generic classes for apparatus and processes, respectively, for such purposes, notes to the definitions thereof referring to related art. This class (134) provides for cleaning and for liquid contact with solids for purposes other than coating and impregnating, with the following exceptions: (a) Application of a detersive material which forms a solidified or hardened coating on the solid material and which is to be subsequently removed whether or not the removal is claimed, including those which bind the undesired or foreign material and remove the same from the base when stripped off. (b) The application of detersive materials for cleaning and pickling of metal which detersive materials have admixed therewith a material (such as oil) which may be left behind on the metal cleaned. (For processes and apparatus for coating and impregnating even though combined with either or both precedent cleaning of the work; see note (2), Lines With Other Classes, above.)

430, Radiation Imagery Chemistry: Process Composition, or Product Thereof, appropriate subclasses for combination of cleaning and a step(s) provided for in the class.

431, Combustion, subclasses 121+ for a residual combustion device having cleaning, purging or scavenging means.

433, Dentistry, subclasses 80+ for dentists' cleaning apparatus which include a dispensing outlet; and subclass 216 for teeth cleaning methods.

435, Chemistry: Molecular Biology and Microbiology, subclasses 262+ for processes of cleaning, liberating or purifying bodies or materials, which include fermentations. (For paper, textiles, fibers, hides, etc., excluded from Class 134; see notes (1), Lines With Other Classes, above).

435, Chemistry: Molecular Biology and Microbiology, subclass 265 for ferment containing compositions and for materials to be used in fer-

mentation processes. (For compounds and compositions; see note (3) Lines With Other classes, above).

440, Marine Propulsion, subclass 73 for self-clearing propellers.

451, Abrading, (see also Note 3, Lines With Other Classes, above)), for a process or apparatus for abrading or cleaning or liquid contact with solids involving use of an abradant, with or without use of a detergent. Search Class 51, subclasses 32+ for a process of or subclasses 326+ for apparatus for abrading or cleaning in which plural workpieces are caused to tumble or rub against each other, with or without use of an abradant or, without use of a liquid when no abradant is utilized. Note that cleaning by tumbling, without an abradant, involving liquid contact is in Class 134.

452, Butchering, has apparatus and processes for cleaning and dressing of animals for food, including cleaning and contacting the same with liquids. (For paper, textiles, fibers, hides, etc., excluded from Class 134; see note (1), Lines With Other Classes, above).

454, Ventilation, subclasses 83, 93, 121+, and 198 for window condensation precenters.

460, Crop Threshing or Separating, (for material mixing, separating, classifying,etc.; see note (4), Lines With Other Classes, above).

474, Endless Belt Power Transmission Systems or Components, subclass 92 for belt and pulley transmission with a cleaning device for the belt or pulley.

494, Imperforate Bowl: Centrifugal Separators, subclasses 27+ for a separator of that class provided with means for furnishing auxiliary fluid to the material or the apparatus and wherein the fluid is liquid in nature. (For material mixing, separating, classifying,etc.)

510, Cleaning Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, for detergents, etc., per se, and for the statement of the line between that subject matter and Class 134.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses for synthetic resins or natural rubber or compositions thereof. (For compounds and compositions).

585, Chemistry of Hydrocarbon Compounds, for hydrocarbon compounds, processes for their synthesis or purification, and certain compositions containing a hydrocarbon. (For compounds and compositions).

604, Surgery, subclasses 19+ for medicators.

SUBCLASSES

1 This subclass is indented under the class definition. Processes which include applications of electric, wave, ray or radiant energy to the work, other than radiant heat energy broadly recited.

(1) Note. Radiant heat energy broadly recited should not be placed in this subclass, but the limitation to particular wave lengths or wave bands should be placed herein.

(2) Note. The use of electric, wave, or radiant energy to destroy hazardous or toxic waste is found in Class 588, subclasses 301-311.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 103 for processes using wave energy in bleaching.

34, Drying and Gas or Vapor Contact With Solids, subclasses 245+ and 266+ for processes involving applying electrical or radiant energy to the work.

204, Chemistry: Electrical and Wave Energy, appropriate subclasses for processes and apparatus for causing chemical reactions by electrical or wave energy action.

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, especially subclasses 705 through 723 for electrolytic cleaning of a metal or metal alloy and subclasses 766-769 for electrolytic treatment of other solids, in general.

219, Electric Heating, for the miscellaneous processes and apparatus for application of electrical energy for heating and welding.

250, Radiant Energy, subclasses 428+ for methods and apparatus involving a fluent material container support or transfer device with or without an

irradiating source for the material, subclasses 453.11+ for methods and apparatus for supports for irradiating objects with or without an irradiating source and subclasses 492.1+ for methods and apparatus for irradiating objects or materials generally.

373, Industrial Electric Heating Furnaces, for furnace structure and processes which involve applications of electric energy to work for heating the same.

399, Electrophotography, subclasses 34+ for diagnostics of a residual toner removal system, subclass 245 for self-cleaning with electrodes a liquid development application member, and subclasses 343+ for cleaning of an image surface, per se.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 22+ for process of using electrical or wave energy for purposes of disinfecting, deodorizing, preserving, or sterilizing.

426, Food or Edible Material: Processes, Compositions, and Products, subclasses 237+ for process of treating foods with electrical or wave energy.

1.1 Plasma cleaning:
This subclass is indented under subclass 1. Process which includes treating the work with a plasma.

(1) Note. Plasma for purposes of this subclass is a gas that is sufficiently ionized for its properties to depend on the ionization. It contains approximately equal numbers of positive ions and electrons so the mixture is electrically neutral, highly conductive and affected by magnetic fields. A thermal plasma is produced by temperatures above 20,000 degrees centigrade.

SEE OR SEARCH CLASS:

216, Etching a Substrate: Processes, for etching processes involving the use of a plasma.

1.2 Semiconductor cleaning:
This subclass is indented under subclass 1.1. Process wherein the work is a semiconductive precursor, substrate, or device.

SEE OR SEARCH CLASS:

438, Semiconductor Device Manufacturing: Process, for (a) combined processes and (b) unit operations not elsewhere provided for manufacturing a semiconductive substrate or device.

1.3 Semiconductor cleaning:
This subclass is indented under subclass 1. Process wherein the work is a semiconductive precursor, substrate, or device.

SEE OR SEARCH CLASS:

438, Semiconductor Device Manufacturing: Process, for (a) combined processes and (b) unit operations not elsewhere provided for manufacturing a semiconductive substrate or device.

2 This subclass is indented under the class definition. Processes in which the work has a metallic, siliceous or calcareous base, and is subjected to a bleaching, oxidizing or reducing action, usually to remove color, dirt, or impurities or other foreign matter from the base.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclasses 101+ for processes of bleaching of other materials.

148, Metal Treatment, subclasses 6+ for the oxidation of solid metal to form an adherent coating.

502, Catalyst, Solid Sorbent, or Support Therefor: Product or Process of Making, especially subclasses 12 and 20+ for a process of removing contaminants, foreign or undesired matter from a catalyst or sorbent.

3 This subclass is indented under subclass 2. Processes which include treating the work with a substance having an acid reaction.

(1) Note. The use of acidic agents is common to many of the processes in this class, and for those excluded by the definition of subclass 2, the appropriate following subclasses must be investigated, some subclasses being set forth in the following notes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

27, for sequential treatments in which an acidic agent is neutralized or is used to neutralize another agent.

28, for sequentially used fluid agents one of which is acidic.

41, for acidic agents applied to metallic work.

42, for miscellaneous fluid agents used to remove particular materials including acid agents to remove materials from nonmetallic work.

4 This subclass is indented under the class definition. Process in which a coating is applied to the work, which coating solidifies or hardens thereon, in which the coating is for cleaning purposes.

SEE OR SEARCH CLASS:

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses for processes within the class definition for molding or casting of films of continuous and/or finite length. For casting on a supporting surface followed by removal therefrom see particularly subclasses 165, 212+ and 239+, particularly subclasses 283, 298 and 299+.

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclass 224 for apparatus comprising means casting fluent stock associated with a shaping surface to form an indefinite length product; see the search notes thereunder.

427, Coating Processes, coating processes combined with a cleaning step performed either before or after the coating operation. Note especially subclass 299 for treating a base prior to coating and subclass 331 for processes of treating a coating subsequent to application.

452, Butchering, subclass 72 for processes of removing hair or feathers from carcasses by use of a solidifiable composition.

5 This subclass is indented under the class definition. Processes which include removing material from the work, which removal comprises melting the material to be removed while it is on the work.

(1) Note. This subclass does not have the emptying of receptacles by melting of the contents, for which see the appropriate other classes as set forth in the notes below. It does, however, have the removal of solid residues adhering to the walls of containers, or adhering to other surfaces by processes including melting.

SEE OR SEARCH THIS CLASS, SUBCLASS:

105+, for apparatus with heating means.

SEE OR SEARCH CLASS:

23, Chemistry: Physical Processes, subclass 308 for processes of separating relative fusible material from other solid material by melting.

37, Excavating, (e.g., subclasses 227+ and subclass 195), for processes which include melting to remove material.

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclasses 401+ for metallurgical processes that include treating multi-component metal-containing scrap having an integral substrate to separate metal therefrom by melting wherein at least one metal remains solid during separation.

100, Presses, subclasses 92+ for presses, not elsewhere classified, having in addition means to heat or cool the material pressed.

126, Stoves and Furnaces, subclass 343.5 for melting furnaces including means for melting tar and similar materials in order to cause the same discharge from a container.

210, Liquid Purification or Separation, subclass 773 for a separating process including preliminary conversion to liquid state.

266, Metallurgical Apparatus, for apparatus for treating metallic ores, including melting and separating.

299, Mining or In Situ Disintegration of Hard Material, subclasses 3+ for a process or apparatus for recovering valuable material from the earth which includes melting.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, appropriate subclasses, especially 285+ for apparatus including a melting feature.

432, Heating, subclasses 1+ for a process of generating and applying heat even through for the purpose of removal of material from a solid base by melting, where there are no operations additional to melting.

6 This subclass is indented under the class definition. Processes, involving treating the work with a mechanically acting solid agent, either alone or in addition to the application of fluids, as, for example, use of solid absorbents, brushing, wiping, scraping, use of a squeegee, cutting, etc.

(1) Note. Solid Materials in solution, solid materials as part of a paste-like composition, and solid materials in the melted state, when used for treatment have been treated as fluids.

(2) Note. The feeding, causing motion or distorting of the work, the solid agent performing no other function on the work, is not in this or the indented subclasses, but in other appropriate subclasses below, see particularly subclasses 14, 15, 16, 23, and 32+.

(3) Note. Manufacturing processes which remove an integral portion of the work by cutting, etc., rather than extraneous or foreign material, are not in this class.

(4) Note. For the distribution of art in treating of paper, textiles, fibers, hides, skins, feathers, and animal tissues, see note (1) to the main class definition.

SEE OR SEARCH THIS CLASS, SUBCLASS:

14, 15, 16, 23, 32, see note (2) above.

SEE OR SEARCH CLASS:

15, Brushing, Scrubbing, and General Cleaning, for apparatus for brushing, beating, scraping, shaking, wiping, shotting, or for using a squeegee, with or without the use of liquids. Class 134 is the generic class for the cleaning and liquid contact processes performed by the apparatus of Class 15.

29, Metal Working, subclasses 76.1+ for metal filling processes and apparatus, subclasses 81.01+ for processes and apparatus for scale removing operating by scraping, flexing, etc., 90.01+ for processes and apparatus for compacting, condensing, smoothing, or polishing the surface of either metallic or nonmetallic articles.

30, Cutlery, for hand manipulable cutting implements capable of use in cleaning processes. This class has extensive notes on manufacturing apparatus involving a cutting operation (including boring, drilling, chiseling, filing, planing, shaving, etc.).

72, Metal Deforming, subclass 40 for a process of or apparatus for mechanically cleaning metal work in connection with plastically shaping the work, e.g., rolling it.

118, Coating Apparatus, subclasses 100+ and 200+ for coating apparatus having a solid member for modifying the coating on the work or applying a coating to the work.

119, Animal Husbandry, subclasses 600+ for a device for animal grooming.

125, Stone Working, subclass 26 for cleaning brick and subclasses 27+ for millstone cleaning by solid work treating agents. Class 134 has cleaning of these materials by detergent action.

168, Farriery, subclasses 48.1+ for hoof cleaners.

228, Metal Fusion Bonding, subclasses 19+ for apparatus for and subclass 125 for method of bonding and removing excess flux or solder from a bonded joint; subclasses 201+ and

205+ for bonding combined with cleaning.

401, Coating Implements With Material Supply, appropriate subclasses (subclasses 49+, however, being inappropriate), for a hand-manipulable coating implement including either a self-contained supply of fluent coating material or means for attachment to an external source of fluent material; subclasses 196+ and 261+ being the residual loci's for such implements having a padlike or blade-like tool, and subclasses 268+ for such implements wherein the tool is of the brush, broom or mop type.

427, Coating Processes, subclasses 355+ for coating combined with treating the coating by contacting it with a solid treating member.

433, Dentistry, subclasses 80+ for dentists' teeth cleaning apparatus which include a dispensing outlet; and, subclass 216, for teeth cleaning methods.

451, Abrading, for a process of or apparatus for cleaning (with or without the use of detergent or other liquid) involving use of an abradant.

7 This subclass is indented under subclass 6. Processes in which the solid agent that treats the work is in particulate or comminuted form, such as pieces of sponge balls, absorbent powders, etc.

SEE OR SEARCH CLASS:

15, Brushing, Scrubbing, and General Cleaning, subclasses 95+ for shotting apparatus, subclasses 3.5, 302 and 320 for the type of particulate material application there provided.

451, Abrading, particularly subclasses 29+ for a process of abrading using a shield, subclasses 32+ for a process of tumbling to abrade, and subclasses 36+ for a process of abrading using a fluent abradant.

502, Catalyst, Solid Sorbent, or Support Therefor: Product or Process of Making, subclasses 400+ for a sorbent composition.

8 This subclass is indented under subclass 6. Processes which include treating work (such as bottles, tubes, or other work having cavities or other interior surfaces) by application of the solid treating agent to the interior surfaces.

SEE OR SEARCH THIS CLASS, SUBCLASS:

7, where the solid treating agent is in particulate or comminuted form.

22.1+, for processes of treating interior surfaces of hollow work not involving the use of a solid work treating agent.

SEE OR SEARCH CLASS:

15, Brushing, Scrubbing, and General Cleaning, for apparatus for cleaning hollow articles by means of an air blast and/or suction, particularly subclasses 304, 316+, 395, and 406+ for apparatus for introducing a brush or wiper into the interior of hollow articles particularly subclasses 22.1+, 56+, 101, and for apparatus for cleaning tubular work by the passage therethrough of a solid or comminuted cleaning instrumentality carried in a fluid stream, see subclasses 3.5+.

34, Drying and Gas or Vapor Contact With Solids, subclasses 104+ and 437+ for processes and apparatus for treating hollow work.

9 This subclass is indented under subclass 6. Processes in which the work is of bar, strip, strand, sheet or web form and the work travels longitudinally while being operated upon by the solid agent.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15, for related processes not involving a solid work treating agent.

64, and 122, for related apparatus.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 151, for processes involving running fabric, etc., lengths.

15, Brushing, Scrubbing, and General Cleaning, subclasses 77, 88, 100, and 101, for apparatus for brushing or wiping longitudinally traveling work of bar, strip, strand, sheet, or web form.

29, Metal Working, subclass 90.5 for burnishing of both metallic and nonmetallic longitudinally traveling work.

34, Drying and Gas or Vapor Contact With Solids, particularly subclasses 306, 359, 414, 419, 444, and 519 for processes and subclasses 94, 110+, 525, and 611+ for apparatus for treating longitudinally traveling work of strip, strand, sheet or web form.

226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

10 This subclass is indented under the class definition. Processes in which the treating agent used is subjected to a treatment after use to (1) regenerate the same, (2) purify the same in any way, (3) recover the same, or (4) separate the same from contaminants derived from any source (usually the work treated whether the agent is to be reused or not, and even though the ingredients separated from the work are recovered for use). The removal of the work from the treating agent is not considered as any of such operations.

(1) Note. For combinations not involving the above subject matter but involving the removal of the agent from, or neutralizing or destroying the agent while on the work, or the removal of the work from the agent, and also for processes involving the admixing of materials to form the desired agent, see coordinate following subclasses.

(2) Note. Where treatment of the work is not involved in the process, the process being directed only to the regeneration, separation, etc., subcombination, the patent is in the class appropriate to the subcombination, see notes (3) and (4) to the main class definition of this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26+, for the sequential application of different treating fluids to work.

36, for the admixing of materials to form the treating fluids, including where one or more solid materials are dissolved.

109+, for apparatus having treating fluid purifying, separating, or treating means.

11 This subclass is indented under subclass 10. Processes, where, in addition to the subject matter there stated, the process includes exposing the work to a gaseous or vapor treating agent so that the same will condense on or be absorbed by the work.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31, for similar processes not involving regeneration, purification, recovery or separation of the agent used.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, subclasses 145+ for treating of textiles or fibers with gases or vapors to clean or chemically modify the same.

34, Drying and Gas or Vapor Contact With Solids, for processes of contacting solids with vapors for purposes other than cleaning.

68, Textiles: Fluid Treating Apparatus, subclasses 5+ for apparatus for treating textiles and fibers with gas, steam, or a mist.

202, Distillation: Apparatus, subclass 170, for apparatus suitable for carrying out this process.

12 This subclass is indented under subclass 10. Processes which include either or both (1) distilling the used agent, or (2) liquefying vapors arising from a liquid agent.

SEE OR SEARCH THIS CLASS, SUBCLASS:

11, for processes where, in addition to treatment of a used agent including

distillation thereof and/or condensation of evolved vapors, there is also condensation or absorption of the vapors on the work. This subclass (11) also has processes which evolve liquefying evolved vapors which would otherwise escape and be lost.

31, for processes where the only vapor liquefaction claimed is that which takes place on the work.

SEE OR SEARCH CLASS:

201, Distillation: Processes, Thermolytic, appropriate subclasses for a process of carbonizing solid carbonaceous material and recovering a liquid product.

203, Distillation: Processes, Separatory, appropriate subclasses for a process of distilling a liquid.

13 This subclass is indented under subclass 10. Processes which include any one or any combination of: crystallizing, precipitating, or otherwise removing part or all of dissolved, undesired solid matter from a used agent.

SEE OR SEARCH THIS CLASS, SUBCLASS:

10, for physical separation of solids not in a dissolved state that contaminate the used agent.

12, for such separation involving distilling.

SEE OR SEARCH CLASS:

23, Chemistry: Physical Processes, appropriate subclasses, for the separation of an inorganic chemical from a mixture, and subclasses 295+ for miscellaneous processes of crystallizing.

260, Chemistry of Carbon Compounds, appropriate subclasses for the separation of an organic compound from a mixture, and subclass 707 for processes of crystallizing organic compounds.

585, Chemistry of Hydrocarbon Compounds, subclass 812 for a crystallization process to recover a hydrocarbon.

14 This subclass is indented under the class definition. Processes which include applying treating agents to the work while it is in coiled form.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15, for processes which involve uncoiling work or recoiling work before and/or after treatment by the agent, the work not being in coiled form during such treatment.

15 This subclass is indented under the class definition. Processes in which the work is of bar, strip, strand, sheet, or web form, and the work travels longitudinally while being acted upon during treatment.

(1) Note. In many of these processes, the work is bent, looped, or otherwise distorted or deformed during treatment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9, for this subject matter having in addition a solid work treating agent and see the notes thereto.

14, for a strip or strand work that is in the form of a coil during treatment, including winding and rewinding where the coils are subjected to treatment.

16+, for miscellaneous processes that include distorting or deforming the work.

64, and 122, for related apparatus.

SEE OR SEARCH CLASS:

226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

16 This subclass is indented under the class definition. Processes in which the work undergoing treatment is so operated upon during the treatment as to have at least a momentary change in shape (other than by mere removal of material therefrom or addition of material thereto) to facilitate or improve the cleaning or liquid contact operation.

(1) Note. The change of shape may be due to shaking, mechanical hammering, or vibrating, bending, crushing, or pressing

the work, or by the operations provided for in the indented subclass, and maybe due to action of feeding or moving the work.

(2) Note. The various classes for manufacturing of articles by a plastic shaping operation, as by molding, drawing, rolling, bending, etc., should be consulted. This class does not take distorting or deforming for the purpose of manufacturing, but only for purpose of perfecting the cleaning or liquid contact operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9, and 15, for distortion of bar, strip, strand, sheet, or web form work.

14, for distortion of coil form work.

17 This subclass is indented under subclass 16. Processes which include distorting the work by temperature change, centrifugal force, or fluid pressure caused shock or vibration.

(1) Note. The temperature change may be due to the temperature of the applied treating fluids, and shock or vibration is due to suddenly applied fluid pressure or water hammer.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19+, for heating processes with or without the application of treating fluids at a temperature different from the work, when the process is not so carried out as to cause significant distortion or deformation of the work.

26+, for application of diverse, sequential treating fluids to the work, and in which the difference between sequential fluids may be temperature where the operation is not so carried out as to cause significant distortion or deformation of the work.

32+, for processes which include imparting motion to the work for purposes other than distorting or deforming.

18 This subclass is indented under the class definition. Processes claiming one or more steps other than or in addition to (1) the feeding, (2) handling during treatment, (3) discharging, (4) heating of either the work or the treating agent, or (5) the use of vacuum, suction, or in inert atmosphere, and not provided for in preceding subclasses.

(1) Note. For example, in this subclass are weighing the work, automatic control of the processes, measuring or testing combinations, cutting combination, etc.

(2) Note. Processes involving drying by heating or contacting the work with gases, vapors or liquids, are not considered combinations and are in appropriate following subclasses.

19 This subclass is indented under the class definition. Processes in which the work is either (1) contacted by hot products of combustion, or (2) heated in any way other than or in addition to contacting the work with heated cleaning or liquid contact agents.

(1) Note. The use of heated cleaning or liquid contact agents (other than products of combustion) including heating such agents while work is immersed therein, are in other appropriate subclasses of this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:

1, where the heating is done by the application of electrical energy to the work, as by conduction or induction, or by application to the work of radiant energy of particular wave lengths or wave bands.

4, for processes including melting of the material to be removed.

17, for heating or combined heating and cooling designed to cause significant distortion or deformation of the work.

26+, for sequential application to the work of treating agents of different temperatures.

105, for apparatus combined with heating means.

SEE OR SEARCH CLASS:

427, Coating Processes, subclasses 223+ for coating combined with contacting the base or the coating with a flame.

20 This subclass is indented under subclass 19. Processes in which carbon is removed from the work.

(1) Note. For example, this subclass includes internal combustion engine cleaning, in which the engine is operated to heat the same.

SEE OR SEARCH THIS CLASS, SUBCLASS:
2, for oxidative removal of carbon.
39, for miscellaneous carbon removal.

SEE OR SEARCH CLASS:
123, Internal-Combustion Engines, for processes of engine operation, even though including cleaning, where steps of engine operation are claimed which are not necessary to the cleaning process claimed.

21 This subclass is indented under the class definition. Processes in which the work is subjected to a vacuum or to suction during treatment, or an inert atmosphere is provided for the work, or any combination between the foregoing operations are used.

(1) Note. The vacuum or suction may be for the purpose of removing liquids or other materials from the work.

(2) Note. Steam is a common treating agent, and patents claiming steam are placed in this subclass only if the process is limited to the steam providing an inert atmosphere.

(3) Note. The use of vacuum or suction to feed and/or mix treating agents, where the work is not subjected to a vacuum or suction action, is not in this subclass, but in other appropriate subclasses, see particularly subclass 36.

SEE OR SEARCH THIS CLASS, SUBCLASS:
19, for contacting the work with products of combustion.
36, see note (3) above.

SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclasses 300.1+, for air blast and/or suction cleaning apparatus.
34, Drying and Gas or Vapor Contact With Solids, subclasses 402+, for processes of drying and processes of contacting solids with gases or vapors (for purposes other than cleaning), and which include use of a vacuum, subclass 92, having corresponding apparatus.
588, Hazardous or Toxic Waste Destruction or Containment, subclasses 300 through 321 for processes to chemically destroy hazardous or toxic waste which may include use of a vacuum.

22.1 Hollow work, internal surface treatment: This subclass is indented under the class definition. Processes which include treating work such as bottles, tubes, or other work having cavities or other interior surfaces by application of the treating agent to the interior surfaces.

SEE OR SEARCH THIS CLASS, SUBCLASS:
8, for this subject matter involving in addition, the use of a solid work treating agent and see the notes thereunder.
14, for treating of work in coil form.
43, 53, 54+, 62, 152, and 166+, or other appropriate apparatus subclasses, for apparatus for treating the interior of hollow work.

SEE OR SEARCH CLASS:
166, Wells, subclasses 311+, for methods of cleaning wells.

22.11 Pipe, tubing, hose, or conduit: This subclass is indented under subclass 22.1. Subject matter wherein the hollow work being treated has the shape of a relatively long and thin cylinder.

22.12 With pressurized fluid or fluid manipulation:
This subclass is indented under subclass 22.11. Subject matter wherein the fluid treating agent is under superatmospheric pressure and/or there is disclosure of significant manipulation of the flow of the fluid.

SEE OR SEARCH CLASS:
137, Fluid Handling, subclasses 15.05 through 15.06 for a process of liquid cleaning.

22.13 With inorganic alkaline material treating agent:
This subclass is indented under subclass 22.11. Subject matter wherein the fluid treating agent comprises an nonorganic basic material.

22.14 With organic treating agent (e.g., solvent, surfactant, or reactant yielding soluble product, etc.):
This subclass is indented under subclass 22.11. Subject matter wherein the fluid treating agent is an organic substance.

(1) Note. The organic substance may be, e.g., a solvent for the substance to be removed from the work, a surface active material, or a substance which chemically reacts with the substance to be removed from the work to form a material which is soluble in a later treating step, etc.

22.15 With steam utilization:
This subclass is indented under subclass 22.11. Subject matter wherein the process includes at some stage the use of water in its gas or vapor form.

22.16 With inorganic salt treating agent:
This subclass is indented under subclass 22.1. Subject matter wherein the treating agent includes an inorganic salt.

22.17 With inorganic alkaline material treating agent:
This subclass is indented under subclass 22.1. Subject matter wherein the fluid treating agent comprises an inorganic alkaline material.

22.18 With pressurized fluid or fluid manipulation:
This subclass is indented under subclass 22.1. Subject matter wherein the fluid treating agent is under superatmospheric pressure and/or there is a disclosure of significant manipulation of the flow of the fluid.

22.19 With organic treating agent (e.g., solvent, surfactant, or reactant yielding, soluble product, etc.):
This subclass is indented under subclass 22.1. Subject matter wherein the fluid treating agent is an organic substance.

23 This subclass is indented under subclass 22. Processes in which either (1) the hollow work moves during treatment, or (2) the hollow work has relatively movable parts at least of which moves during treatment (e.g., engines where the piston moves during treatment).

(1) Note. Motion of plural work pieces sequentially to the work treating station where it is stationary during work treatment is included.

SEE OR SEARCH THIS CLASS, SUBCLASS:
20, for internal combustion engines operative as such with resultant heating, and with application of treating agents during or after engine operation.
32+, for similar subject matter for the other than hollow work having steps for treating an interior surface.

24 This subclass is indented under subclass 22. Processes having either (1) the nozzle which applies the agent movable to properly distribute the agent, or (2) involving the plugging or sealing of passages or openings in the hollow article.

SEE OR SEARCH THIS CLASS, SUBCLASS:
172, and notes thereto for apparatus having movable nozzles.

25.1 Work handled in bulk or groups:
This subclass is indented under the class definition. Processes in which the work is treated in bulk or in groups, as distinguished from the handling and treatment of single articles.

SEE OR SEARCH CLASS:
210, Liquid Purification or Separation, subclasses 675+, for a process of rehabilitation of ion exchange or sorption material by transfer of granules to another chamber or zone when combined with a liquid treatment step.

25.2 Kitchen or tableware:
This subclass is indented under subclass 25.1. Processes in which the work treated comprises dishes, utensils, culinary articles, etc.

25.3 Food:
This subclass is indented under subclass 25.1. Processes in which the work treated comprises fruits, vegetables, eggs, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
6, for cleaning of food material including using solid work-treating agents, e.g., brushes.

25.4 Manufactured articles:
This subclass is indented under subclass 25.1. Processes in which the work treated comprises manufactured articles.

(1) Note. Articles included herein are intended to be used individually although they are cleaned or contacted by liquid in bulk form.

25.5 Work stationary or moved countercurrently:
This subclass is indented under subclass 25.1. Processes in which the work remains relatively stationary during contact or is moved countercurrently to the fluid stream.

26 This subclass is indented under the class definition. Processes in which two or more treating agents are sequentially applied to the work.

(1) Note. One of the agents may be for the purpose of drying work.

(2) Note. Neither the application of mixed treating fluids to the work, nor the simultaneous application of plural treating fluids to the work is in this or the indented subclasses, see particularly subclass 36.

SEE OR SEARCH THIS CLASS, SUBCLASS:
4, where a solidified or hardened coating is formed on the work for subsequent removal.
6+, where a treating agent is in solid form, when it contacts the work, even though subsequently dissolved.
10+, for the regeneration, purification, recovery or separation of treating agents when not on the work.
19+, where products of combustion contact the work.
36, see also note (2), for plural separately fed and simultaneously applied treating agents and processes which involve premixing of plural treating agents.
61, 84+, and 94+, for apparatus for applying different fluids sequentially.

27 This subclass is indented under subclass 26. Processes in which a subsequently applied agent operates to chemically neutralize a previously applied agent, e.g., where an alkaline agent operates to neutralize a previously applied acidic agent.

(1) Note. Even though the actual application of the first agent is not claimed, where the subsequently applied agent is claimed as neutralizing or being neutralized by such a previously applied agent, the patent is here.

SEE OR SEARCH THIS CLASS, SUBCLASS:
28, for sequential treatments, at least one being a treatment by an acid agent, but having no neutralizing treatment.
29, for sequential treatments, at least one being a treatment by an alkaline agent, but having no neutralizing treatment.
41, for treatments of metal bases with acid agent, not involving the use of a sequentially applied treating agent.

28 This subclass is indented under subclass 26. Processes which include treating the work with either an acid or an acid salt.

(1) Note. Included are those having an alkaline reaction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
27, for such treatments followed by a neutralizing treatment, or for the use of such treatment to neutralize a material already applied.
41, for acid treatments of metal base work, per se.

29 This subclass is indented under subclass 26. Processes which include treating the work with a fatty acid soap, rosin soap, soap of unspecified constitution, or a substance which has an alkaline reaction.

SEE OR SEARCH THIS CLASS, SUBCLASS:
27, for processes in which an alkaline agent is neutralized by another agent or is used to neutralize another agent.

30 This subclass is indented under subclass 26. Processes which include treating the work with steam or gas, or heating or cooling the work or treating it at specified temperatures or with an agent which has a specified temperature or with plural agents at different temperatures.

SEE OR SEARCH THIS CLASS, SUBCLASS:
27, 28, and 29, for the subject matter of this subclass (30) utilizing the particular agents specified in such subclasses.
37, for use of gas or vapor blasts alone.

31 This subclass is indented under the class definition. Processes in which a gas or a vapor is caused to be condensed upon or absorbed on the work.

SEE OR SEARCH THIS CLASS, SUBCLASS:
11, for such subject matter combined with regeneration, purification, recovery, or separation of the treating agent other than when on the work, and see the notes thereto.

SEE OR SEARCH CLASS:
202, Distillation: Apparatus, subclass 170 for apparatus suitable for carrying out this process.

32 This subclass is indented under the class definition. Processes in which (1) the work moves during treatment, or (2) the work has relatively movable parts at least one of which moves during treatment. The motion may be caused by fluid contact.

SEE OR SEARCH THIS CLASS, SUBCLASS:
9, and 15, where work of bar, strip, strand, sheet, or web form moves longitudinally.
14, for work in coil form movable during treatment.
16+, for miscellaneous processes in which motion of the work causes it to be distorted or deformed, as by shock or vibration.
23, for hollow work that has an interior surface treated and is movable during treatment.
25.1+, for work handled in bulk or in groups, accompanied by motion during treatment.

SEE OR SEARCH CLASS:
451, Abrading, subclasses 32+ for a process of abrading in which plural workpieces are caused to tumble against each other to promote cleaning thereof.

33 This subclass is indented under subclass 32. Processes in which the work is subjected to centrifugal force and/or the work is rotated.

SEE OR SEARCH THIS CLASS, SUBCLASS:
14, where work in coiled form is rotated during treatment.
17, where work is subjected to centrifugal force which is so applied as to distort or deform the work.
23, for rotary hollow work that has an interior surface treated.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, subclasses 58 and 312+, for processes and apparatus involving use of centrifugal force.

427, Coating Processes, subclasses 240+ for processes of coating by using centrifugal force.

34 This subclass is indented under the class definition. Processes in which the treating fluid has motion during the work treatment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

22+, for processes of introducing agents into the interior of hollow work, subclass 24 having those using movable fluid applying nozzles.

31, where the treating agent is a gas or vapor that is absorbed or condensed on the work.

32+, where the work is also movable during treatment.

35 This subclass is indented under subclass 34. Processes in which the treating fluid motion is caused by heating.

(1) Note. The motion may be caused by vapors generated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

30, for use of steam or other gases.

36, for use of steam to feed and admix with other treating materials.

106, for apparatus for producing liquid flow by heating.

SEE OR SEARCH CLASS:

68, Textiles: Fluid Treating Apparatus, subclasses 191+, for textile apparatus in which thermal means causes liquid flow.

36 This subclass is indented under subclass 34. Processes which include treating the work with a plurality of fluids fed from separate sources. The plurality of fluids may be of diverse or similar types, as substances in both liquid and vapor phases (such as liquid water and steam) two or more liquids from different sources, or a liquid and air or other gas, either simultaneously applied or admixed prior to application.

SEE OR SEARCH THIS CLASS, SUBCLASS:

11, and 31, for processes in which the work is treated simultaneously with a vapor and a liquid, the liquid being the vapor condensate which condenses on the work.

26+, for processes involving sequential application of fluids.

31, see preceding reference to subclass 11.

50+, and 94+, for apparatus for applying plural fluids together or separately.

37 This subclass is indented under subclass 34. Processes which include treating the work with a gaseous or vaporous blast or a gaseous or vaporous current.

SEE OR SEARCH THIS CLASS, SUBCLASS:

30, for sequentially applied fluid agents, one being a gas or vapor current or blast.

36, for gas or vapor currents or blasts used to admix with other treating agents.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, the subclasses starting with subclass 283 for processes of treating solids with gases or vapors for drying or for purposes other than cleaning.

38 This subclass is indented under the class definition. Processes in which paints, varnishes, lacquers, or enamels are removed from the work.

39 This subclass is indented under the class definition. Processes in which carbon is removed from the work.

SEE OR SEARCH THIS CLASS, SUBCLASS:

2+, for oxidizing of carbon to remove the same from metallic, calcareous or silicious base work.

20, where the work is also heated by modes other than the fluids applied or is, contacted by combustion products (e.g., by operating an internal combustion engine with resultant heating).

SEE OR SEARCH CLASS:
201, Distillation: Processes, Thermolytic, subclass 2 for a thermolytic distillation process including the step of cleaning the apparatus or removing adherent char.

40 This subclass is indented under the class definition. Processes in which oils, waxes, tars, or greases are removed from the work by solvent, action.

SEE OR SEARCH THIS CLASS, SUBCLASS:
11, and 31, for solvent removal of such materials which operate by solvent vapor condensation on the work.
39, for carbon removal, carbon deposits frequently having oils or greases admixed therewith.

SEE OR SEARCH CLASS:
137, Fluid Handling, subclasses 15.05 through 15.06 for a process of liquid cleaning.

41 This subclass is indented under the class definition. Processes which include treating metallic base work with acids.

SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for acid treatments of metal base work which treatment includes oxidation, reduction, or bleaching.
27, for acid treatments when the acid is neutralized or is used to neutralize another agent.
28, for acid treatments preceded or followed by another treatment.

42 This subclass is indented under the class definition. Miscellaneous processes not provided for in preceding subclasses.

(1) Note. In this subclass are collected as originals or as cross references, disclosures of the particular contaminants removed from the work, and/or the particular chemicals or fluids, used, except for the characters of subject matter provided for in the below noted subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
20, for carbon removal where the process includes heating or contact with combustion products.
38, for removal of paints, varnishes, lacquers, or enamels.
39, for miscellaneous carbon removal.
40, for oil, grease, tar, or wax removal by dissolving.
41, for acid treating metal base work.

43 This subclass is indented under the class definition. Apparatus in which there is a station having both (1) means movable relative to the work (a finder) so as to enter an aperture or passage in the work, and (2) means to support the work so as to move (orient) the work by hand or power at the station until a passage or aperture out of line with the finder is moved to a position in line therewith and the finder does so enter (i.e., move the work at the station from a position where the aperture or passage is improperly positioned to a position where the aperture or passage is in a position in which the finder enters the same).

(1) Note. For example, barrels which are rotated at the station until the finder enters the bunghole are here.

(2) Note. The finder may be a fluid delivery conduit or a separate element.

(3) Note. Guide means in line with a fluid delivery means so as to guide the work thereto, so that the fluid delivery means enters an aperture or passage, there being no means to orient the work relative to the guide, are not in this or the indented subclasses, but appropriate following subclasses, as are conveyors which convey the work to fluid applying means but having no means to orient the work relative to the conveyor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

8, and 22.1+, for processes of treating hollow work.

53, 54+, 62, 152, and 166+, or other appropriate following subclasses for other apparatus for treating hollow work not having the features provided for in subclass 43.

SEE OR SEARCH CLASS:

198, Conveyors: Power Driven, subclasses 383+, for a conveyor having a significantly-shaped portion that cooperates with a significantly-shaped load to orient the latter.

44 This subclass is indented under the class definition. Apparatus in which some element or control of the apparatus is operated or controlled by engagement with the work or by a holder for the work that is separate from the apparatus.

(1) Note. Apparatus having interconnected or interengaging parts so that motion of one part causes motion of another, is not in this and the indented subclasses, but is in appropriate following subclasses.

(2) Note. In this subclass, for example, are devices in which relative motion between the work and fluid applying means causes sliding or rectilinear motion of the member immediately moved to operate or control a fluid controlling valve.

SEE OR SEARCH THIS CLASS, SUBCLASS:

56+, for other forms of automatic controls.

SEE OR SEARCH CLASS:

118, Coating Apparatus, subclasses 668+, for coating apparatus having means to control the application of coating material by the work presence or absence.

251, Valves and Valve Actuation, subclass 156 for receptacle operated valves.

45 This subclass is indented under subclass 44. Apparatus in which the work is a vehicle of any kind (as automobile, locomotive, etc.) or in which the work is a wheel for any purpose.

(1) Note. Many of the patents in this subclass are arrangements by which the vehicle engine drives the cleaning or liquid contact apparatus either directly or through the medium of the vehicle wheels.

SEE OR SEARCH THIS CLASS, SUBCLASS:

123, for other vehicle or wheel form work, the apparatus not having work or separate work holder operated devices.

46 This subclass is indented under subclass 44. Apparatus in which the device operated or controlled is other than a fluid controlling valve, e.g., power stop controls, trips, work counters, switches, etc.

SEE OR SEARCH CLASS:

192, Clutches and Power-Stop Control, subclasses 116.5+ for stop mechanism, particularly subclasses 125+ for material control.

47 This subclass is indented under subclass 46. Apparatus in which the device operated or controlled is a pump.

SEE OR SEARCH CLASS:

417, Pumps, appropriate subclasses for pumps, per se.

418, Rotary Expansible Chamber Devices, for rotary expansible chamber devices, per se.

48 This subclass is indented under subclass 44. Apparatus in which there is either an endless belt type or rotary type work carrier or conveyor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

67+, 70+ and 124+, for other endless belt type work carrier combinations.

78+, and 157+, for other rotary work carrier or conveyor combinations.

49 This subclass is indented under subclass 44. Apparatus having means for conveying the work, or separate work holders, by movable carriers or by guides through the apparatus without return movement to the point of entry over the same path.

SEE OR SEARCH THIS CLASS, SUBCLASS:
48, for endless belt and rotary type carriers.
82, and 165, for other combinations with guide rails.

50 This subclass is indented under subclass 44. Apparatus having two or more means to supply two or more different fluids.

(1) Note. The different fluids may be mixed prior to application to the work or may be separately applied to the work either sequentially or simultaneously.

(2) Note. Where there is but a single fluid supply claimed, even though disclosed or claimed as having a fluid mixture, the patent is not in this subclass unless plural means for supplying the fluids separately for admixture are claimed.

(3) Note. Means for applying plural streams of the same fluid to the work are in other appropriate subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
94.1+, for other apparatus not having the work or separate work holder operated devices.

51 This subclass is indented under subclass 44. Apparatus in which the organization is such that fluids impinging against either the work or the work holder cause the same to move.

SEE OR SEARCH THIS CLASS, SUBCLASS:
138+, for such apparatus not having work or separate work holder operated devices.

52 This subclass is indented under subclass 44. Apparatus in which the member immediately engaged by relative motion between it and the work or separate work holder and moved thereby has rotary, swinging, rocking or pivotal motion.

(1) Note. The valve may be directly or indirectly operated or controlled by such movable member.

SEE OR SEARCH THIS CLASS, SUBCLASS:
44, and other appropriate indented subclasses for apparatus in which the element immediately moved has sliding or rectilinear motion.

53 This subclass is indented under subclass 52. Apparatus, in which fluids are applied to work having hollows or passages, both internally and externally.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166+, and see the notes thereto for other apparatus for hollow work.

54 This subclass is indented under subclass 44. Apparatus in which fluids are applied to work having hollows or passages, both internally and externally.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166+, and see the notes thereto for other apparatus for hollow work.

55 This subclass is indented under subclass 54. Apparatus in which there are means for applying a jet of fluid to the exterior of work.

56 This subclass is indented under the class definition. Apparatus claiming some character of automatic control.

(1) Note. By automatic control is meant the provision of means to sense a condition (for example, means to sense a temperature, pressure, rate of motion, viscosity, specific gravity, etc.) which automatic sensing means operates or controls some

device that in turn performs some character of control function.

(2) Note. The above definition is intended to exclude valves, closures, and nozzles directly operated by fluid pressure (e.g., check valves, safety valves).

SEE OR SEARCH THIS CLASS, SUBCLASS:
43, for finders and orienters for passages and apertures in work.
44+, for controls operated by the work or by a separate work holder.

SEE OR SEARCH CLASS:
34, Drying and Gas or Vapor Contact With Solids, subclasses 524+ for automatic controls of such apparatus.
118, Coating Apparatus, subclasses 663+ for coating apparatus having automatic controls.

57 This subclass is indented under subclass 56. Apparatus in which the automatic control system involves the use of electrical energy in performing a control function.

SEE OR SEARCH THIS CLASS, SUBCLASS:
58, for electric controls not having automatic features.

58 This subclass is indented under the class definition. Apparatus having electrical control means.

(1) Note. Electric motor operated apparatus is included in this subclass only when some electrical control means other than the motor itself is claimed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
57, for automatic electric controls.

SEE OR SEARCH CLASS:
118, Coating Apparatus, subclasses 663+ for coating apparatus having electrical controls.

59 This subclass is indented under the class definition. Apparatus having means for assembling the several separated parts of the work, or having means for operating on the work to separate the several separable parts thereof or a combination of these two means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
23, and 32+, for processes involving work having parts movable during treatment.

60 This subclass is indented under the class definition. Apparatus which include means for conveying or allowing flow of work-treating or other fluid from one work-treating station to another work-treating station, either in or out of contact with work-treating fluid at one or both stations, other than fluid carried by the work, and other than direct fall of work-treating spray at one work-treating station into a work immersion vat at another work-treating station.

SEE OR SEARCH THIS CLASS, SUBCLASS:
135, and other appropriate subclasses for work draining which is not considered to be treating.

61 This subclass is indented under the class definition. Apparatus having two or more distinct work treating receptacles, treating stations, or fluid applying devices, and having, in addition, means that carries, conveys, or transfers the work from one such receptacle or station to another, or transfers the receptacles or fluid applying devices from one location to another so as to afford sequential treatment of the work with different fluids.

(1) Note. The term “treating” excludes mere draining of liquids from the work, while on the carrier, conveyor, or transfer means, for which see appropriate following subclasses.

(2) Note. One work treating station may be for purposes other than liquid treating.

(3) Note. The application of the same fluid to plural parts of the same work piece or to plural work pieces where there is either a single fluid applying means or plural fluid applying means grouped to form a single station has not been placed

in this or the indented subclasses. There should be two or more separate station for performing either the same or different functions upon the work, and where plural stations each apply fluids, there must be at least two different fluid sources.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26+, for related processes.

84+, for other plural work treating receptacles or treating stations having no means operated as part of the apparatus for transferring the work from one to another, i.e., those in which the work is manually transferred.

137+, and see the notes thereto for apparatus having means to movably mount, convey, or transfer the work where there is but a single work treating receptacle or treating station, even though the work is moved to a liquid draining position.

62 This subclass is indented under subclass 61. Apparatus in which, at the entrance or work feeding part of the machine, there is a station having means (1) to initially empty work (in the form of receptacles or work having hollows or passages therein), or (2) to invert, or (3) to orient, or (4) to puncture the work; which station has no means for applying fluid to the work, and which station is considered to be one of the work treating stations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

43, for orienters combined with a finder for an aperture in the work.

SEE OR SEARCH CLASS:

198, Conveyors: Power-Driven, subclasses 344, 345, and 373+ for a conveyor having means for orienting the conveyed load relative to the conveyor, and subclasses 402+ for a conveyor having means to invert the conveyed load.

63 This subclass is indented under subclass 61. Apparatus in which means are provided for treating the work in some manner other than by fluids, by draining the work, or by heating the work (e.g., grading, classifying, sifting, weighing, wringing, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

43, for finders of apertures in the work.

59, for work assembling or disassembling means.

62, for means for emptying, inverting, or orienting the work prior to fluid treatment.

64 This subclass is indented under subclass 61. Apparatus having means to treat work in the form of a strip, bar (e.g., log), strand, or web traveling longitudinally of itself.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9, and 15, for related processes.

122, for other apparatus for treating sheet, web, strand or bar form work.

SEE OR SEARCH CLASS:

226, Advancing Material or Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

65 This subclass is indented under subclass 61. Apparatus in which at least one work conveyor is of the screw conveyor type.

SEE OR SEARCH THIS CLASS, SUBCLASS:

132, for corresponding single station apparatus and see the notes thereto for related art.

66 This subclass is indented under subclass 61. Apparatus in which there are at least two movable work carriers or conveyors (i.e., movable to convey the work or work holder-not merely movable for adjustability of detachability of same) and means are provided to transfer the work from one to another in its travel through the machine from one work treating receptacle or station to another.

(1) Note. The plural movable work carriers may have separate or common drive means or may be rigidly connected (as

by mounting on a common drive shaft) if there are provided means for transferring the work from one to another.

SEE OR SEARCH CLASS:
414, Material or Article Handling, subclasses 564 through 571 for types of combined carriers.

67 This subclass is indented under subclass 66. Apparatus in which at least one of the work carriers is of the endless belt conveyor type.

68 This subclass is indented under subclass 67. Apparatus in which at least one fluid applying station has one or more of the following types of fluid applying means (1) a splasher, (2) a sprayer, or (3) means to jet the fluid against the work.

69 This subclass is indented under subclass 66. Apparatus in which there are at least two carriers rotary about the same axis, with means to transfer the work from one to the other.

SEE OR SEARCH CLASS:
451, Abrading, subclasses 328+ for plural tumbling drums for cleaning or abrading with means to transfer work from one drum to another.

70 This subclass is indented under subclass 61. Apparatus in which the means to transfer, carry, or convey the work from one work treating receptacle or station to another is of the endless belt type.

SEE OR SEARCH THIS CLASS, SUBCLASS:
48, for endless belt type with work operated valve.
67+, for plural conveyors (one endless) with work transfer means.
124+, for single station apparatus with endless belt conveyor.

SEE OR SEARCH CLASS:
198, Conveyors: Power-Driven, appropriate subclasses for endless belt type conveyor structures in general.

71 This subclass is indented under subclass 70. Apparatus, in which the carrier belt guides (whether stationary or rotary) have a horizontal axis.

72 This subclass is indented under subclass 71. Apparatus in which at least one fluid applying station has one or more of the following types of fluid applying means, (1) a splasher, (2) a sprayer, or (3) means to jet the fluid against the work.

73 This subclass is indented under subclass 72. Apparatus in which at least one fluid applying station applies liquids by immersing the work therein.

74 This subclass is indented under subclass 73. Apparatus having means, in addition to the movable work support, for causing fluid motion at the immersing station (e.g., splashers, pumps, or agitators).

75 This subclass is indented under subclass 71. Apparatus in which the same endless belt type work carrier is sequentially immersed in liquids in at least two different liquid holding receptacles, to thus immerse the work therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
67+, for plural carriers, at least one being of the endless belt type, with work transfer means.
71, for endless carriers that carry the work to two or more immersing tanks but in which the endless conveyor element is not immersed.

76 This subclass is indented under subclass 61. Apparatus in which a movable work carrier is moved from one treating receptacle or station to another by means of the traversing hoist-type, i.e., means which elevates the carrier, translates the same to the next station, and lowers the same again if necessary.

SEE OR SEARCH THIS CLASS, SUBCLASS:
70, through 74, for traversing hoist type devices in which endless belts are provided for the traversing.

SEE OR SEARCH CLASS:
212, Traversing Hoists, for pertinent subclass(es) as determined by schedule review.

77 This subclass is indented under subclass 76. Apparatus in which the traversing means is adapted to move the work in a curved on non-rectilinear path (e.g., swingable on a vertical axis).

78 This subclass is indented under subclass 61. Apparatus in which the means to transfer, carry, or convey the work from one work treating receptacle or station to another is mounted for rotary or swinging motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:
65, 69 and 77, for other rotary or swinging carriers for sequential work treating station type apparatus.
134, for rotary or swinging work feeding and/or discharging means.
137+, for single station type apparatus with rotary or swinging types of work holders or carriers.

SEE OR SEARCH CLASS:
198, Conveyors: Power-Driven, appropriate subclasses, particularly subclasses 441, 450, 480+, 608, 611+, 803, and others, for rotary conveyors in general.

79 This subclass is indented under subclass 78. Apparatus in which the transfer means rotates about an axis passing through the approximate center thereof, the work holding means being distributed about the axis of rotation.

SEE OR SEARCH THIS CLASS, SUBCLASS:
65, for the screw conveyor type.
142, for Ferris-wheel type single station apparatus.

SEE OR SEARCH CLASS:
451, Abrading, subclasses 328+ for tumbling drum-type apparatus for cleaning or abrading.

80 This subclass is indented under subclass 79. Apparatus in which the axially rotary transfer means is of the turntable type, i.e., pivoted to rotate about a substantially vertical axis.

81 This subclass is indented under subclass 80. Apparatus in which valve mechanism for controlling fluids is operated synchronously or in coordination with the turntable, as by having a common drive, or being connected to or engaged by some turntable part.

SEE OR SEARCH THIS CLASS, SUBCLASS:
44+, for work operated valves.

82 This subclass is indented under subclass 61. Apparatus having guide rails or rods engageable by the work or separate work holder or carrier.

SEE OR SEARCH THIS CLASS, SUBCLASS:
49, 125 and 165, for guide rails in other combinations.

83 This subclass is indented under subclass 82. Apparatus in which the guide rails or rods are vertical, inclined, curved, or movable or are provided with rollers or adapted for immersion of work in a liquid.

84 This subclass is indented under the class definition. Apparatus having any one or any combination of the following features: (1) two or more fluid holding receptacles or chambers, each of which is for the fluid treating of work and in which the plural chambers may be formed by partitions in a larger chamber; (2) two or more fluid treating stations with means to selectively deliver fluids to one at a time, or to less than all at a time; (3) a liquid applying receptacle or station and a second receptacle or station for drying, draining, or the application of vapors or gases, and under (1) to (3) the work itself being manually transferred from one station to another, as distinguished from moving a work holder from one place to another.

(1) Note. Single or plural means to apply fluids to a plurality of parts of the same work or to a plurality of work pieces,

where such fluid applying means are grouped together to form a single station (with or without plural separately movable work supports) will not cause classification in this or the indented subclasses, but are in appropriate following subclasses. There must be, in addition, one or more of the features above set forth.

SEE OR SEARCH THIS CLASS, SUBCLASS:

61+, for plural work treating receptacles or stations having, in addition, means to transfer the work from one to another.

135, for combinations involving a liquid holding tank, a work holder used therein, the work holder being movable to a position other than the position it has during liquid contact operations, with means for holding the same in such position.

137+, for apparatus having a single work station and means to movably mount the work or work support, even though the device is organized to move the work away from the liquid applying means to permit the same to drain, there being no station distinct from the liquid applying station having features specialized to care for the drainage.

85 This subclass is indented under subclass 84. Apparatus in which at least one station has a movably mounted work holder or work receptacle connected for motion relative thereto.

SEE OR SEARCH THIS CLASS, SUBCLASS:

92, for workholders or compartments detachably associated with other parts of the combination, but not connected thereto for relative motion.

86 This subclass is indented under subclass 85. Apparatus in which the movably mounted workholder or receptacle is designed for motion during fluid application to cause or assist in application of fluids to the work.

87 This subclass is indented under subclass 86. Apparatus in which there are two or more workholders or supports which are supported so that the weight of one and work therein would be partly or wholly counterbalanced or counterpoised by the weight of at least one of the others and work therein. This includes, for example, the two types (1) in which two workholders are supported on a walking beam at opposite sides of the supporting pivot of the beam so that one workholder moves up when the other moves down, and (2) two workholders which are supported by and on opposite sides of a movable column, but in which the two workholders are not necessarily arranged to move one upwardly when the other moves downwardly, but both may move up simultaneously or down similarly.

SEE OR SEARCH THIS CLASS, SUBCLASS:

76+, for traversing hoist type devices for transferring work from one station to another.

88 This subclass is indented under subclass 84. Apparatus having either, or both, (1) means to supply fluids to one or more of the work treating receptacles or stations, or (2) movable means to apply fluids to the work at one or more of the stations, e.g., pumps or splashers.

SEE OR SEARCH THIS CLASS, SUBCLASS:

86, where the workholder or fluid holding receptacle moves during fluid application.

89 This subclass is indented under subclass 88. Apparatus having means (such as a pump, splasher, or agitator) to cause fluid motion, to either supply fluids to a fluid holding receptacle or to apply fluids to the work.

90 This subclass is indented under subclass 88. Apparatus having either a heater or a heat exchanger associated therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

105+, for other heater combinations.

91 This subclass is indented under subclass 84. Apparatus having a drain for draining liquids from one or more of the stations, which drain is valve controlled.

92 This subclass is indented under subclass 84. Apparatus in which (1) one work station or compartment is detachably associated with another, or (2) there is a workholder detachably associated with at least one work station so that it may be removed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

85+, where one workholder or receptacle is interconnected for motion with another, as distinguished from being merely detachable or has means for moving the same during fluid application.

93 This subclass is indented under the class definition. Apparatus having means to supply to the treating fluids a solid agent to be dissolved therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

94.1+, for means for feeding liquid detergents.

SEE OR SEARCH CLASS:

15, Brushing, Scrubbing, and General Cleaning, subclasses 3.5+ for patents disclosing and claiming systems in which a mechanical cleaning is effected by a solid agent carried through tubular work in a fluid stream provided for this purpose.

68, Textiles: Fluid Treating Apparatus, subclass 17 for such machines combined with soap supplying means.

137, Fluid Handling, subclass 268 for fluid distribution systems including a holder for a solid material to be dissolved or entrained.

206, Special Receptacle or Package, subclass .5 for receptacles containing detergents which are infusible directly from or through the receptacle walls.

239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 310+ and 336 for spraying apparatus having means to mix, dissolve or entrain a material (which may be a solid) in a flowing liquid stream prior to discharge through a nozzle member; also subclasses 303+, 340+ and 398+ for other spray devices in which the entrained or dissolved material is usually another fluid.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 261+ for extracting, leaching, or dissolving apparatus.

94.1 With plural means for supplying or applying different fluids at the same workstation:
This subclass is indented under the class definition. Apparatus having one work treating station which includes either plural means for treating a work product with different fluids at the workstation.

(1) Note. The difference between the fluids may be merely temperature.

(2) Note. The different fluids may be fed to a common conduit or other mixing means prior to application to the work; or the different fluids may be fed at different times through the same or different conduits to the work.

SEE OR SEARCH THIS CLASS, SUBCLASS:

26+, and 36, for related processes.

50, for corresponding apparatus having an operating or controlling device engaged and moved by the work or a separate workholder.

57, and 58, for the subject matter of this and indented subclasses 95-98, wherein the ordering or coordinating means is an electrical timer or programming circuit means.

95.1 Means for sequentially applying different fluids:
This subclass is indented under subclass 94.1. Apparatus which includes means for successively applying two or more different fluids to the work.

95.2 With drying means:
This subclass is indented under subclass 95.1. Apparatus combined with means for drying the work.

95.3 Fluid spraying means:
This subclass is indented under subclass 95.1. Apparatus comprising means for applying one or more of the fluids to the work in the from of a spray.

SEE OR SEARCH CLASS:
118, Coating Apparatus, subclasses 300+ for coating apparatus in which the coating material is flung, projected or sprayed onto the work.

96.1 With nonimpelling plural way liquid outlet (e.g., two way valve) or nonimpelling liquid outlet control coordinated with other control:
This subclass is indented under subclass 94.1. Apparatus, combined with (1) two or more passages for passively directing fluids from a working-treating chamber or (2) means for coordinating or operatively interconnecting a passive outlet control and some other control.

97.1 Coordinated inlet nonimpelling control and noninlet control:
This subclass is indented under subclass 94.1. Apparatus which has means coordinating or operatively interconnecting a passive work-treating chamber fluid inlet control and some other kind of device.

98.1 With coordinated or multiple valves:
This subclass is indented under subclass 94.1. Apparatus combined with (1) interconnected, coordinated, or multiway valves for controlling flow of the plural fluids or (2) means to selectively direct or divert liquids to any one of plural conduits or courses used to conduct the liquid from the work.

99.1 Plural fluids applying conduits:
This subclass is indented under subclass 94.1. Apparatus which includes two or more conduits for applying two or more fluids to the work.

99.2 With means for supplying an additive (e.g., liquid detergent):
This subclass is indented under subclass 99.1. Apparatus comprising means for supplying a small amount of a product which supplements or improves the performance of the work-treating fluid.

(1) Note. The amount of the additive is small in relation to the amount of the fluids.

(2) Note. The product may be a fluid or a nonfluid.

100.1 With means for mixing or contacting fluids with each other before applying them:
This subclass is indented under subclass 99.1. Apparatus which includes means for blending two or more fluids together or for impinging one fluid upon another prior to applying them to the work.

102.1 Having steam, air or gas applying conduit:
This subclass is indented under subclass 100.1. Apparatus wherein one of the fluids being applied to the work through a conduit is steam, air or gas.

102.2 With pressurized air or gas supplying means for fluid movement:
This subclass is indented under subclass 102.1. Apparatus combined with a source of air or gas, under pressure, for agitating or propelling the work treating fluid.

102.3 With drying means:
This subclass is indented under subclass 102.1. Apparatus combined with means for drying the work.

103.1 Having means for recirculating or reversing fluid flows:
This subclass is indented under subclass 94.1. Apparatus which includes means for sending one or more of the fluids back through one or more of their respective conduits.

103.2 Fluid spraying means:
This subclass is indented under subclass 94.1. Apparatus comprising means for applying one or more of the fluids to the work in the form of a spray.

103.3 Movable:
This subclass is indented under subclass 103.2. Subject matter wherein the position of one or more parts of the spraying apparatus can be changed.

(1) Note. The position change may range from merely rotating the nozzle to moving the entire spraying apparatus.

104.1 Having self cleaning means:
This subclass is indented under the class definition. Subject matter having means for cleaning the cleaning apparatus itself.

SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclasses 3.51+ for apparatus for cleaning tubular work by passing a fluid carried instrumentality therethrough, and having means for collecting or retrieving the cleaning agent for reuse, at the end of a cleaning operation.
34, Drying and Gas or Vapor Contact With Solids, subclass 513 for the same subject matter applied to the apparatus of that class.
118, Coating Apparatus, subclasses 17, 70, 104, 203, 302, and 429 for coating apparatus having cleaning or conditioning means.
198, Conveyors: Power-Driven, subclasses 494+ for a conveyor having installed as part of its structure a means for cleaning a component of the conveyor.

104.2 With means for collecting escaping material:
This subclass is indented under the class definition. Subject matter having means to collect material that departs from the desired path through the apparatus.

(1) Note. Such escaping material may be either the work or work treating material or both.

104.3 Cleaned material:
This subclass is indented under subclass 104.2. Subject matter in which material that has been cleaned is collected.

104.4 Foreign material separated from liquid:
This subclass is indented under subclass 104.2. Subject matter in which material other than the cleaned material is separated from a liquid.

105 This subclass is indented under the class definition. Apparatus having means in one of the following forms or some combination thereof: (a) a heating means, (b) a cooling means, or (c) a heat exchange means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
90, for heaters, or heat exchangers in other combinations.
94.1+, for fluid injection heaters or coolers.

SEE OR SEARCH CLASS:
118, Coating Apparatus, subclasses 58+ for coating apparatus combined with heating or cooling means for the work.
266, Metallurgical Apparatus, subclasses 121+ for apparatus for heating solid metal combined with separate means for applying fluids to the metal after heating.

106 This subclass is indented under subclass 105. Apparatus which includes means for producing flow of a liquid through a conduit by pressure in the liquid or by pressure of a fluid there against, generated by heating the liquid or the fluid or both.

SEE OR SEARCH THIS CLASS, SUBCLASS:
35, for related processes.

107 This subclass is indented under subclass 105. Apparatus which includes heat-exchange means external to the work treating chamber, vat, or zone.

108 This subclass is indented under subclass 105. Apparatus which includes means for recirculating the work treating liquid through a conduit and through the work-treating chamber, vat, or zone.

109 This subclass is indented under the class definition. Apparatus having means for separating contaminants from the treating fluids, so that the fluids free from such separated contaminants may be applied to the work.

(1) Note. The separating means must be means in addition to the main tank for

the work, e.g., a separate decanting chamber.

SEE OR SEARCH THIS CLASS, SUBCLASS:
10+, for related processes.
105+, for apparatus employing a heating and/or cooling means (as, for example, a still) to separate contaminants from the treating liquid.

SEE OR SEARCH CLASS:
210, Liquid Purification or Separation, and see the notes to the main class definition for other classes having separation and purification of materials.

110 This subclass is indented under subclass 109. Apparatus in which the fluid purifying or separating means operates by filtering or straining contaminating solids therefrom.

(1) Note. Foraminous workholders, which permit the passage of fluids for, or the escape of fluids after, application to the work, are not included, even though disclosed or claimed as a filter or strainer. The fluid filter or strainer must be in addition to the work holder.

(2) Note. Foraminous structures through which fluids are delivered against the work in the form of a spray or plural jets are not considered to be filters or strainers. The filter or strainer must be in addition to such structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
109, for filters or strainers combined with other types of purifiers or separators and for such other types, per se.

111 This subclass is indented under subclass 110. Apparatus which includes means for recirculating the work-treating liquid through a strainer.

112 This subclass is indented under the class definition. Apparatus in which either (1) a brake is provided for any moving part of the apparatus, (2) a clutch is provided between any two moving parts of the apparatus.

SEE OR SEARCH CLASS:
188, Brakes, for pertinent subclass(es) as determined by schedule review.
192, Clutches and Power-Stop Control, for pertinent subclass(es) as determined by schedule review.

113 This subclass is indented under the class definition. Apparatus having any one or any combination of the following: indicating means; signalling means; alarm means; means to display the treating fluids or the work; means to inspect the interior of the apparatus (other than mere closures); means to illuminate the apparatus or a part thereof; or means to perform a test.

SEE OR SEARCH THIS CLASS, SUBCLASS:
46, for counters and other devices operated by the work or a separate workholder.
56+, for automatic controls.
63, for combinations including weighing, wringing, classifying, sifting, etc., with sequential work stations.

SEE OR SEARCH CLASS:
73, Measuring and Testing, and see the notes to the main class definition for the distribution of art on measuring and testing, per se.
116, Signals and Indicators, for pertinent subclass(es) as determined by schedule review.
118, Coating Apparatus, subclasses 712+ for coating apparatus having testing, inspecting, measuring, signal or indicator means.
340, Communications: Electrical, appropriate subclasses. Note especially subclasses 500+ for electrically operated alarms automatically responsive to a condition.
362, Illumination, for pertinent subclass(es) as determined by schedule review.

114 This subclass is indented under the class definition. Apparatus having a liquid trap seal.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, subclasses 402+, and see the notes thereto for other processes and apparatus using liquid seals.

115 This subclass is indented under the class definition. Apparatus where some apparatus feature is claimed in addition to: (1) means for introducing the work into, holding or conveying the work within, or discharging the work from the apparatus, or (2) means for feeding, discharging, holding, directing, or agitating the treating fluids, or (3) means for collecting or discharging treating fluid drainage; or apparatus which, by manipulation of its parts (including addition, removal, or change of position), may be converted from apparatus of one character to apparatus of a second character, other than the combinations provided for in preceding subclasses.

116 This subclass is indented under the class definition. Apparatus for treating work having two or more relatively movable parts, the apparatus having means to cause at least two such parts to move relative to each other during operation of the apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:

59, for work assembling or disassembling.

117 This subclass is indented under the class definition. Apparatus in which there is a receptacle for the treating fluid, which receptacle is mounted for motion during the normal cycle of operation of the apparatus.

(1) Note. In this apparatus, the work is usually (but not always) placed in such receptacle.

SEE OR SEARCH THIS CLASS, SUBCLASS:

150, for movably mounted receptacle form work constituting the sole treating liquid holder.

SEE OR SEARCH CLASS:

68, Textiles: Fluid Treating Apparatus, appropriate subclasses, particularly subclasses 139+ for textile tumbling apparatus.

118, Coating Apparatus, subclass 421 for immersion coating apparatus having movably mounted immersion receptacles.

248, Supports, subclasses 128+ for miscellaneous stands for movable receptacles.

366, Agitating, particularly subclasses 219+ for an agitator with a movable mixing chamber.

451, Abrading, subclasses 328+ for a tumbling drum.

118 This subclass is indented under subclass 117. Apparatus having means constructed at the bottom of the receptacle (including the formation of the receptacle bottom) for permitting rocking or rolling thereof, so that the axis of rocking or rolling shifts transversely thereof during such motion.

119 This subclass is indented under subclass 117. Apparatus in which the fluid holding chambers or receptacles are mounted, or designed for rotary or swinging motion.

120 This subclass is indented under subclass 119. Apparatus in which the rotary or swinging motion is on a substantially horizontal axis only.

121 This subclass is indented under subclass 119. Apparatus in which the rotary or swinging motion is on a substantially vertical axis only.

122 This subclass is indented under the class definition. Apparatus having means to handle work of sheet, strand, web, or bar (e.g., log) form, travelling longitudinally of itself.

SEE OR SEARCH THIS CLASS, SUBCLASS:

9, 15, for related processes.

64, for apparatus having sequential work treating receptacles or stations.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, subclasses 611+, and see the notes thereto for sheet, web, or strand handling apparatus.

118, Coating Apparatus, subclass 419, and see the notes thereto for apparatus for coating running length work.

226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

123 This subclass is indented under the class definition. Apparatus in which the work is a vehicle of any kind or in which the work is a wheel for any purpose.

SEE OR SEARCH THIS CLASS, SUBCLASS:

45, for such apparatus having work or separate workholder operated devices.

124 This subclass is indented under the class definition. Apparatus having an endless conveyor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

48, 67+ and 70+, for other combinations with an endless belt type conveyor.

SEE OR SEARCH CLASS:

118, Coating Apparatus, subclasses 239, 322, 324, and 423+ for coating apparatus having endless work conveyors.

198, Conveyors: Power-Driven, for endless conveyor structure, per se.

125 This subclass is indented under subclass 124. Apparatus having guide rails directly engaged by the work or work holding means (as distinguished from the guide rails frequently provided for the endless conveyor).

SEE OR SEARCH THIS CLASS, SUBCLASS:

49, for guide rails combined with work operated controls.

82, for guide rails where there are sequential work treating stations.

165, for guide rails in other combinations.

126 This subclass is indented under subclass 124. Apparatus in which, in addition to the endless belt, there is another work conveyor or a work manipulator to operate upon the work precedent to delivery to the endless conveyor, after delivery from the endless conveyor or while on the endless conveyor.

SEE OR SEARCH THIS CLASS, SUBCLASS:

67+, for work transfer from one movable carrier to another, at least one being an endless belt type, there being sequential work stations.

125, Where there are guide rails for the work or workholder.

128, for endless belts with means to hold the work thereon and means to release the work held.

127 This subclass is indented under subclass 124. Apparatus in which there are two or more endless belts.

(1) Note. They may, for example, be arranged in series, in parallel, or in face to face relation throughout parts of their lengths.

SEE OR SEARCH THIS CLASS, SUBCLASS:

125, for combinations with guide rails.

126, for combinations with a nonendless-belt conveyor.

128 This subclass is indented under subclass 124. Apparatus in which the endless-belt conveyor has either or both (1) means operable after work deposition for holding the work thereon, or (2) means to release such holding means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

125, where the endless-belt is associated with guide rails and the work is held therebetween.

126, where the work is held between an endless-belt and a nonendless-belt conveyor.

127, where the work is held between two facing endless conveyors.

129 This subclass is indented under subclass 124. Apparatus in which (1) at least one of the fluid delivery conduits or nozzles is movably mounted, or (2) the endless-belt is interconnected with a fluid controlling valve for operation so that either (a) motion of one causes motion of the other, or (b) one is required to be in a preselected position before the other can move.

SEE OR SEARCH THIS CLASS, SUBCLASS:
24, for processes of treating hollow work using a movable nozzle.
44+, 144+, 167+, and 172+, for movable nozzles in other combinations.

130 This subclass is indented under subclass 124. Apparatus having means, in addition to the endless conveyor, for causing fluid motion (e.g., pump, agitator, or splasher).

(1) Note. Such additional means must not be mounted on the conveyor, but there may be a common drive.

SEE OR SEARCH THIS CLASS, SUBCLASS:
147, where the movable work support is other than an endless conveyor.

131 This subclass is indented under subclass 124. Apparatus having fluid delivery conduits or nozzles for spraying or applying jets to the work.

(1) Note. The conduits may be for delivering the fluids either to the work or to fluid holding receptacles.

SEE OR SEARCH THIS CLASS, SUBCLASS:
48, 68, 72+, and 129, for other endless belt with spray or jet combinations.

132 This subclass is indented under the class definition. Apparatus in which the work passes along a spiral path and/or the work conveyor is of spiral form (for example, a screw conveyor).

SEE OR SEARCH THIS CLASS, SUBCLASS:
65, for related plural treating station apparatus.

SEE OR SEARCH CLASS:
198, Conveyors: Power-Driven, subclass 715 for conveyors such as belts and rollers moving the load on a helical path, and subclasses 475.1, 513, 545, 548, 550.6, 550.10, 582, 608, 611+, 625, 657+, and others for a screw conveyor.
366, Agitating, particularly subclasses 318+ for casings having a screw conveyor therein, for agitating the contents, as distinguished from this subclass which has either casings containing a liquid and a screw conveyor in a separate, foraminous casing mounted in the first or which handle the solid work as individual articles.
451, Abrading, subclass 327, and see the reference to Class 451 in the (5) note of the main class definition of Class 134.

133 This subclass is indented under the class definition. Apparatus having either, or both, (1) means to feed work in to, or (2) means to discharge work from, the apparatus.

(1) Note. In this subclass, the feeding means and/or the discharging means must be in addition to the means that holds or manipulates the work during the fluid treating operation and the means for moving the same to or from fluid treating position (i.e., such means as conveyors, chutes, etc., for delivering work to the preceding apparatus, or receiving work discharged therefrom).

(2) Note. The preceding subclasses have special combinations involving this subject matter.

SEE OR SEARCH CLASS:
221, Article Dispensing, appropriate subclasses and see the reference to Class 221 in the class definition of this class for a statement of the class lines.

414, Material or Article Handling, appropriate subclasses. See the reference to Class 414, in Note (5) of the class definition of this class (134) for a statement of the class lines.

134 This subclass is indented under subclass 133. Apparatus in which the feeding or discharging means is adapted to convey the work or workholder and to rotate or swing, or is pivoted other than a mere gate or stop.

135 This subclass is indented under the class definition. Apparatus in which a workholder that may be moved into and out of fluid contacting position, has some means in addition to the means for so moving the work holder to hold the work holder in a draining position above the treating liquid in the liquid holding receptacle.

SEE OR SEARCH CLASS:
99, Foods and Beverages: Apparatus, subclasses 410+ for boiler or deep fat fryer type cooking apparatus with elevated draining position.

136 This subclass is indented under the class definition. Apparatus which includes a workholder which is adapted to act as a plunger, or pump piston and which has a valve for allowing fluid flow in one direction but not in the opposite direction.

137 This subclass is indented under the class definition. Apparatus having either means to movably mount the work, or means to movable mount the work support.

(1) Note. Where the work or work support is not movably mounted, but motion is only incidental due to operation of a fluid agitator or other fluid currents, the patents are not in subclasses 137+, but in appropriate following subclasses.

(2) Note. This subject matter appears in numerous special forms and combinations in the preceding subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166+, for apparatus having manually insertable and removable workholders for work having hollows or passages, there being no mounting means providing for guided relative motion between the work support and the remainder of the apparatus.

SEE OR SEARCH CLASS:
451, Abrading, subclass 327, and see the reference to Class 451 in the (5) note of the main class definition of Class 134.

138 This subclass is indented under subclass 137. Apparatus in which a work holder or support is mounted for motion (e.g., rotary, swinging or oscillatory motion) and there are means for directing a fluid current against either the work or the workholder to cause either or both to move.

SEE OR SEARCH THIS CLASS, SUBCLASS:
51, for such apparatus having also a work or separate workholder-operated device.
140+, for motor operated means to move the work or work support.

139 This subclass is indented under subclass 138. Apparatus which includes a movably mounted means, in addition to the device, for moving the work for splashing or pumping a fluid.

140 This subclass is indented under subclass 137. Apparatus claiming a motor for operating any part of the apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:
56+, for automatically controlled motors.
58, for electrically controlled motors.
188, for similar subject matter having no movable work support.

141 This subclass is indented under subclass 140. Apparatus in which the motor is a turbine or other type of fluid operated motor.

SEE OR SEARCH THIS CLASS, SUBCLASS:
51, and 138+, for devices for moving (e.g., rotating) work by impact of a liquid jet thereagainst.

129, 144+, 167+, and 172+, for jet or spray nozzles caused to move by reaction of the fluid discharged.

142 This subclass is indented under subclass 137. Apparatus in which two or more immediate work carriers are separately and movably mounted on a common support so that the carriers are capable of motion relative to each other, and the common support is also movably mounted.

(1) Note. For the most part, motion of the common support results in both relative motion between each of the work carriers and between the carriers and the common support, e.g., a "Ferris-wheel" type.

(2) Note. The preceding work conveyor subclasses have special types of such apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:

158+, for apparatus in which there are plural work holders or chambers which move together without relative motion.

161, for apparatus in which a single workholder has a compound motion.

143 This subclass is indented under subclass 137. Apparatus in which a tank closure is interconnected with any one of any combination of (a) a valve, (b) a movable work support, (c) a fluid agitator, splasher or pump, or (d) a movably mounted spray or jet applying conduit or nozzle, so that either (1) motion of one causes motion of the other, or (2) one is required to be in a preselected position before the other can move.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162, for work support driving or journaling means mounted on or extending through the cover and having no other interconnecting means as above defined.

177, for tank closures interconnected with movable nozzles.

144 This subclass is indented under subclass 137. Apparatus having fluid nozzles or jet forming means for applying fluids to the work, which devices are mounted for motion relative to the other portion of the apparatus.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44+, where the nozzle of jet forming means is moved by the work or separate work holder.

129, 167+ and 172+, for movable nozzles in other combinations.

145 This subclass is indented under subclass 144. Apparatus in which the jet or spray applying conduits or nozzles are mounted on and move with the movable work support, but have no motion relative to the work support.

SEE OR SEARCH THIS CLASS, SUBCLASS:

144, where a nozzle, even though mounted on a movable work support is so mounted as to be movable relative thereto.

146 This subclass is indented under subclass 137. Apparatus in which a movable mounted work support is interconnected with a valve so that (1) motion of one imparts motion to the other, or (2) one is required to be in a preselected position before the other can be moved.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44+, for work operated valves.

81, for turntable operated valves.

129, for endless conveyor operated valves.

145, for interconnected valve and work support in which the work support also carries jet or spray applying conduits or nozzles.

147 This subclass is indented under subclass 137. Apparatus having means, in addition to a movable work support, for causing fluid motion (e.g., pump, agitator, splasher).

(1) Note. Such additional means must not be mounted on the movable work support, but there may be a common drive.

SEE OR SEARCH THIS CLASS, SUBCLASS:

130, where the movable work support is an endless conveyor.

148 This subclass is indented under subclass 147. Apparatus in which fluids are discharged from a spray nozzle or a jet conduit directly onto the work.

(1) Note. The pump may deliver only to the spray nozzle or jet that applies them to the work and also there may be a splasher or agitator to separately apply fluids to the work.

SEE OR SEARCH THIS CLASS, SUBCLASS:

147, where an agitator or splasher is the only means to apply fluids to the work, even though the agitator or splasher receives fluids from a conduit.

149 This subclass is indented under subclass 137. Apparatus in which the work holder is an axially rotary chuck mandrel, rod or axle that passes into or through the work to mount the same.

SEE OR SEARCH THIS CLASS, SUBCLASS:

137, or other appropriate indented subclasses, particularly subclasses 144 and 152, for means for mounting work having hollows or passages, which mounting means do not pass into or through the work even though a treating fluid delivering means does pass into or through the work.

150 This subclass is indented under subclass 137. Apparatus in which the work is of receptacle form, means are provided for mounting the same for motion, the receptacle-form work constituting the sole treating liquid holding means.

SEE OR SEARCH THIS CLASS, SUBCLASS:

117, for movably-mounted fluid-holding receptacles in which the work is placed.

SEE OR SEARCH CLASS:

118, Coating Apparatus, subclass 408 for coating apparatus in which hollow work is filled with coating material.

151 This subclass is indented under subclass 137. Apparatus having fluid nozzles or jet forming means for applying fluids to the work.

SEE OR SEARCH CLASS:

118, Coating Apparatus, subclasses 300+ for coating apparatus in which the coating material is flung, projected or sprayed onto the work.

152 This subclass is indented under subclass 151. Apparatus in which the apparatus is specially constructed to introduce fluids into passages or hollows in the work, other than by mere immersion.

(1) Note. Numerous preceding subclasses have apparatus for movably mounting and treating hollow work classified on other special features.

SEE OR SEARCH THIS CLASS, SUBCLASS:

43, 53 through 55, 62, 166+, for other types of apparatus for hollow work.

153 This subclass is indented under subclass 151. Apparatus, in which the workholder is mounted for rotation or swinging, or is pivoted.

SEE OR SEARCH THIS CLASS, SUBCLASS:

157+, and see the noted thereto for other rotary, pivoted or swinging work supports.

154 This subclass is indented under subclass 137. Apparatus having a baffle or deflector which is not operable to impel fluids, and which will engage fluids impelled by other means to change their direction of motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

147, for fluid impelling means not forming a part of the movable work support.

163, for fluid impelling means mounted on the movable work support.

182+, for other combinations having a non-impelling fluid baffle or deflector.

155 This subclass is indented under subclass 137. Apparatus having means for feeding liquid to and/or draining liquid from the tank with which the movable work support is associated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

91, for valved liquid drains from at least one of plural stations.

144, 151+, for spray of jet applying conduits or nozzles that both apply liquids to the movably mounted work and supply liquids to the tank.

156 This subclass is indented under subclass 137. Apparatus in which there is a spring to drive or bias the movable work support to some position and/or a float is connected to the movable work support to exert a buoying action in the liquid.

157 This subclass is indented under subclass 137. Apparatus in which the work support is mounted so as to have rotary, revolving, swinging or oscillating motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

51, 65, 69, 77, 78+, 138+, 142, 149, 150, and 153, for other rotary or swinging work carriers.

67+, 70+ and 124+, for endless belt type carriers.

158 This subclass is indented under subclass 157. Apparatus in which the movable work support has (1) two or more chambers or compartments to receive the work, (2) two or more separate means to hold the work on the work support and/or (3) a single work receiving chamber with a removable cover which cover may be positioned either at the entrance to the chamber or within the chamber.

(1) Note. The plural chambers may be formed between the movable work support and the walls of the tank.

159 This subclass is indented under subclass 158. Apparatus in which the work support is mounted for rotation, revolving or swinging on a horizontal axis.

160 This subclass is indented under subclass 157. Apparatus in which the movable work support is carried by one or more pivoted links or levers or strands. The work support may have a compound motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164, for other link, lever, or strand mounted work supports.

161 This subclass is indented under subclass 157. Apparatus in which the work support has some additional motion (e.g., combined rotary and reciprocating). The motions may be simultaneous or sequential.

SEE OR SEARCH THIS CLASS, SUBCLASS:

76+, for traversing hoist type conveying means for transferring work from one station to another.

142, for apparatus having plural work holders mounted for motion relative to each other on a common movably mounted support.

162 This subclass is indented under subclass 157. Apparatus in which the actuating means for the work holder either extends through or is carried by the cover for a tank with which the work support is associated.

SEE OR SEARCH THIS CLASS, SUBCLASS:

192, and 197, for pumps, splashers, or agitators, for moving fluids having actuating means extending through or carried by a tank cover.

163 This subclass is indented under subclass 157. Apparatus in which some means specially designed to impel fluids is mounted on and thus movable with the pivoted work support.

164 This subclass is indented under subclass 137. Apparatus in which the work support is reciprocatable by strands or is carried by links or

levers that are pivoted to some means that imparts reciprocatory motion to the work support.

SEE OR SEARCH THIS CLASS, SUBCLASS:
137, for miscellaneous reciprocatory work supports.
156, for movable work supports carried by springs.
160, for other link, lever, or strand mounted work supports.

165 This subclass is indented under subclass 137. Apparatus having guide rails or rods directly engaged by the work or workholding means.

SEE OR SEARCH THIS CLASS, SUBCLASS:
49, and 82+, for other guide rail combinations.
125, for guide rails of this type combined with an endless conveyor.

166 This subclass is indented under the class definition. Apparatus in which the apparatus is specially constructed to introduce fluids into passages or hollows in the work, other than by mere immersion.

(1) Note. The preceding subclasses have special forms of apparatus for treating hollow work.

SEE OR SEARCH THIS CLASS, SUBCLASS:
8, 20 and 22.1+, for processes of treating hollow work.
43, for apparatus for orienting hollow work with a finder for an aperture therein.
53, and 54+, for hollow work operated valves.
62, for hollow work emptying, inverting, orienting, or puncturing combined with treating.
152, for miscellaneous apparatus having means to movably mount hollow work and apply sprays or jets thereto.

SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclasses 3.5+ for apparatus for cleaning tubular work by the passage therethrough of a solid or comminuted mechanical cleaning instrumentality carried in a fluid stream, and subclasses 104.03+ for pipe and tube cleaning implements, per se.
34, Drying and Gas or Vapor Contact With Solids, subclasses 104+ for hollow work treatment.
118, Coating Apparatus, subclasses 317+, and see the notes thereto, for apparatus for coating the inside of hollow work.
166, Wells, appropriate subclasses for apparatus for cleaning or washing wells.

167 This subclass is indented under subclass 166. Apparatus in which at least one fluid discharge means is movably mounted, including those movable due to flexibility.

SEE OR SEARCH THIS CLASS, SUBCLASS:
24, for processes for treating hollow work using a movable nozzle.
44+, 129, 144+, and 172+, for other combinations using a movable nozzle.

168 This subclass is indented under subclass 167. Apparatus having means for generating pressure in the fluid.

SEE OR SEARCH THIS CLASS, SUBCLASS:
106, for generating fluid pressure by heating.
184, and see the notes thereto for other combinations involving fluid pressure generating means.

169 This subclass is indented under subclass 166. Apparatus having means for generating pressure in the fluid.

SEE OR SEARCH THIS CLASS, SUBCLASS:
184+, and see the notes thereto for other combinations involving this subject matter.

170 This subclass is indented under subclass 166. Apparatus having means for applying fluids externally of the work in addition to introducing fluids into passages or hollows.

(1) Note. The external fluid applying means may be a collar or flange to direct the fluids emitted from the interior of the work over the exterior thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
53, and 54+, for this subject matter combined with a work operated valve.

171 This subclass is indented under subclass 166. Apparatus which has a plurality of pipes for supplying fluid in parallel.

172 This subclass is indented under the class definition. Apparatus in which at least one fluid spray or jet applying conduit or nozzle is movably mounted, including those movable due to flexibility.

SEE OR SEARCH THIS CLASS, SUBCLASS:
24, for processes of treating hollow work using a movable nozzle.
44+, 129, 144+, and 167+, for other combinations using a movable nozzle.

SEE OR SEARCH CLASS:
118, Coating Apparatus, subclass 307 for railway vehicles having nozzle means to spray a coating liquid onto the railway track rails.

173 This subclass is indented under subclass 172. Apparatus in which the movable nozzle or conduit is adapted to function as a pump or which is an element of a pump.

174 This subclass is indented under subclass 172. Apparatus which includes a pump, fluid splasher, or agitator, separate from, or in addition to, the movable nozzle or conduit.

SEE OR SEARCH THIS CLASS, SUBCLASS:
173, where the movable conduit or nozzle functions as a pump or is an element of a pump.

175 This subclass is indented under subclass 174. Apparatus in which the nozzle or conduit is attached to or operatively interconnected with a work treating chamber closure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
143, for combinations where the work or work support is movable mounted.
177, for miscellaneous combinations not involving a separate pump, splasher, or agitator.

176 This subclass is indented under subclass 174. Apparatus in which a nozzle is adapted to be moved by reaction of a fluid issuing therefrom.

SEE OR SEARCH THIS CLASS, SUBCLASS:
179, for fluid discharge reaction nozzles in other combinations.

177 This subclass is indented under subclass 172. Apparatus in which the nozzle or conduit is attached to or operatively interconnected with a work treating chamber closure.

SEE OR SEARCH THIS CLASS, SUBCLASS:
143, for combinations with means to movably mount the work.
175, for combinations with a separate pump, splasher, or agitator.

178 This subclass is indented under subclass 172. Apparatus in which the motion of the nozzle or conduit is coordinated or operatively interconnected with a valve for controlling fluid flow thereto.

179 This subclass is indented under subclass 172. Apparatus in which a nozzle is adapted to be moved by reaction of a fluid issuing therefrom.

SEE OR SEARCH THIS CLASS, SUBCLASS:
176, for fluid discharge reaction nozzles combined with a separate pump, splasher, or agitator.

180 This subclass is indented under subclass 172. Apparatus which has guiding means to restrict motion of a movably-mounted nozzle or con-

duit to rotation, swinging or movement in a closed annular path of any form, or to a curved path.

181 This subclass is indented under subclass 180. Apparatus which includes a motor moving the nozzle or conduit.

182 This subclass is indented under the class definition. Apparatus having a baffle or deflector which is not operable to impel fluids, and which will engage fluids impelled by other means to change the direction of motion.

SEE OR SEARCH THIS CLASS, SUBCLASS:
154, for combinations involving both means to movably mount or support the work and a nonimpelling fluid baffle or deflector.

183 This subclass is indented under subclass 182. Apparatus in which the baffle or deflector is movably-mounted, adjustable, or removable.

184 This subclass is indented under the class definition. Apparatus in which some movable device or means is operative on fluids to cause the same to move.

(1) Note. Various special combinations involving this subject matter appear in the preceding subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:
47, for work operated pumps.
68, 72+, 89, 130, 136, 139, 140+, 147+, 163, 168, 169, 173, and 174+, for other combinations involving this subject matter.
106, where fluid pressure is generated by heat.

185 This subclass is indented under subclass 184. Apparatus in which the means for causing fluid motion has a compound motion (e.g., combined rotary and reciprocating motion).

186 This subclass is indented under subclass 184. Apparatus having either means to supply liquids to and/or drain liquids from the tank with which the movable means that causes fluid motion is associated.

SEE OR SEARCH THIS CLASS, SUBCLASS:
91, 96 and 155, for drains in other combinations.

187 This subclass is indented under subclass 184. Apparatus in which means that moves fluids is pivoted so as to have rotary, swinging, or oscillating motion.

188 This subclass is indented under subclass 187. Apparatus in which a motor for operating some part of the apparatus is claimed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
140, for motor operated apparatus having a movable work support.

189 This subclass is indented under subclass 187. Apparatus in which the pivoted fluid moving means is so configured and/or mounted as to move in an annular path that surrounds the work-space. The motion may be rotary, swinging, or oscillating.

190 This subclass is indented under subclass 187. Apparatus in which the fluid moving means operates to cause the fluids to move into and through an annular, work-space surrounding conduit which delivers to the work space.

191 This subclass is indented under subclass 187. Apparatus in which the fluid moving means is adapted to deliver to a nozzle or conduit.

192 This subclass is indented under subclass 187. Apparatus in which operating means for the fluid moving device extends through or is carried by a work treating chamber cover.

SEE OR SEARCH THIS CLASS, SUBCLASS:
162, for rotary, revolving, or swinging work holders having actuating means extending through or carried by a tank cover.
197, for vertically reciprocable fluid moving devices whose actuating means extends through or is carried by a cover.

193 This subclass is indented under subclass 187. Apparatus in which there are two or more separate fluid moving devices as distinguished from two or more vanes or paddles attached to the same shaft.

194 This subclass is indented under subclass 187. Apparatus in which the fluid moving device is mounted for rotation or swinging on a horizontal axis.

195 This subclass is indented under subclass 184. Apparatus which includes a fluid moving means which is a pump adapted to take in fluid at one point and discharge the fluid at another point.

196 This subclass is indented under subclass 184. Apparatus which includes a dasher or fluid moving device which is mounted for being reciprocated vertically.

197 This subclass is indented under subclass 196. Apparatus in which operating means for fluid-moving device extends through or is carried by a work treating chamber cover.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162, for rotary revolving or swinging workholders having actuating means extending through or carried by a tank cover.

192, for rotary or swinging, agitating means which extends through or is attached to a tank cover.

198 This subclass is indented under the class definition. Apparatus which includes means for supplying or applying a spray or jet.

(1) Note. Numerous preceding subclasses have this subject matter in special combinations.

199 This subclass is indented under subclass 198. Apparatus which includes means for applying sprays or jets to the work which is adapted to surround the work, or apply fluid from opposite sides of the work, or which has a plurality of fluid supplying pipes operable in parallel.

SEE OR SEARCH THIS CLASS, SUBCLASS:

53, 55, 122, 170, and 171.

200 This subclass is indented under subclass 198. Apparatus which includes a closable work treating chamber.

SEE OR SEARCH THIS CLASS, SUBCLASS:

143, 162, 175, 177, 192, and 197, for other subject matter classified on the basis of a closure combination.

201 This subclass is indented under the class definition. Apparatus for which none of the preceding subclasses provide.

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900 **PAINT ROLLER:**
This subclass is indented under the class definition. Apparatus including means to contact the paint roller with a liquid.

901 **CONTACT LENS:**
This subclass is indented under the class definition. Apparatus including means to contact contact lens with a liquid.

902 **SEMICONDUCTOR WAFER:**
This subclass is indented under the class definition. Apparatus including means to contact a semiconductor wafer with a liquid.

END